The State of the Earned-Income Tax Credit in Nashville: An Analysis of Economic Impacts and Geographic Distribution of the "Working Poor" Tax Credit, TY 1997-2004

John Haskell
Vanderbilt University
August 04, 2006

Prepared for

The Nashville Wealth Building Alliance

CONTACT INFORMATION

Please direct questions or comments to the study's author or sponsors:

Author

John N. Haskell
Vanderbilt University
(513) 289-9904
john.n.haskell@vanderbilt.edu

Sponsor Contacts

Rachel Freeze—NWBA Coordinator
United Way Nashville
Nashville Wealth Building Alliance
(615) 780-2444
rachel.freeze@unitedwaynashville.org

Samantha Hamernik—Former NWBA Coordinator
United Way Nashville
Nashville Wealth Building Alliance
(402) 750-2486
shamernik@hotmail.com

Jessica LeVeen Farr
Federal Reserve Bank of Atlanta
Community Affairs Division
(615) 251-7360
jessica.leveen@atl.frb.gov

ABOUT THE AUTHOR

John N. Haskell is a student at Vanderbilt University completing a B.S. in Organizational Development and Public Policy and a B.A. in Honors Economics. John spent a semester of his junior year studying the EITC with a public finance class at Vanderbilt, which performed a study that included a literature review, equity analysis, and preliminary cost-benefit analysis titled *The Efficacy of the Earned-Income Tax Credit*. John has received advanced training in IMPLAN impact modeling from its proprietor, IMPLAN Minnesota.

ABOUT THE NASHVILLE WEALTH BUILDING ALLIANCE

The Nashville Wealth Building Alliance (NWBA) is a broad-based collaboration dedicated to promoting financial stability for low- and moderate-income individuals and families of Nashville/Davidson County. The coalition engages business, community, government and faith-based organizations to provide direct services and create linkages that will enable struggling families in the community achieve new levels of self-sustaining financial independence.

SPECIAL THANKS

The study would not have been possible without the help of the following individuals:

Jessica LeVeen Farr of the Atlanta Fed enabled collaboration between the author and Nashville Wealth Building Alliance. Jessica was always accessible and provided the author with timely guidance, suggestions and important contacts throughout the research process.

Alan Berube of the Brookings Institution was instrumental in the research process by providing the adjusted, zip-code level IRS data on which the economic and geographic analyses were based. Alan was always helpful in answering questions on data technicalities.

Samantha Hamernick, former Coordinator of the Nashville Wealth Building Alliance, worked quickly and efficiently to ensure the resources required for the study were in place when needed.

EXECUTIVE SUMMARY

The federal EITC is a major source of economic stimulus to metropolitan economies. Tens of millions of dollars are transferred from the federal treasury to low-income Nashville households via the IRS each year. The author was retained by the Nashville Wealth Building Alliance to analyze the impact of payments received by Nashville residents through the Earned-Income Tax Credit (EITC) on the economies of Davidson County-Nashville and the Nashville Metropolitan Statistical Area (MSA). The amount of EITC dollars "left on the table" over these years was also estimated, and were analyzed for the potential impact on the city's economy. Efforts to capture these unclaimed tax dollars would lead to the creation of jobs, wages, and tax revenue for local governments. The study's focal point was later expanded to include a geographic analysis of Nashville's EITC recipients. Here are the key findings:

- From 1998 to 2005, $565 million Federal EITC dollars[1] have entered the Davidson County/Nashville Metropolitan economy from $600 million in local EITC disbursements. These initial stimuli have produced additional economic returns in indirect and induced effects totaling $38.5 million, or 7 percent of initial impacts, for a total stimulus of $1.07 per each EITC dollar that enters Davidson County/Nashville. As such, the total economic impact to Nashville from the EITC over these eight years exceeds $600 million. The total economic impact to the MSA over the time series was approximately $1.25 billion.

- 2005 (or, TY 2004) represents the strongest EITC year on record for Nashville. EITC returns disbursed in 2005 brought $76.8 million dollars into the Davidson County/Nashville economy plus $5.0 million in additional stimulus, bringing the total economic impact for the year to $81.8 million. Inflation-adjusted EITC growth for 2005 was 1.7 percent from 2004 (or 5.7 percent nominal growth). Direct stimulus from EITC dollars has risen in real terms by 8.2 percent from 1998 to 2005 (31.1 percent nominal growth), or an average annual real growth rate of 1.3 percent. Year-to-year trends suggest that the rate of growth is flattening; however, a simple linear model projects $100 million (present value dollars) in Davidson County annual credit filings by 2011. Direct and total impacts for the MSA region in 2005 were $162.7 and $173.5 million, respectively.

- EITC dollars and related stimulus sustained 708.1 jobs[2] in Davidson County-Nashville during 2005. This number is up 3 percent from 2004 and is much higher from the eight-year average of 648.6 jobs. It currently takes $106,000 local EITC dollars (or 73 returns, on average) to produce 1 additional local job.

- The data suggests that the EITC not only supports the wider working-poor population with tax assistance but also works redundantly to provide a small portion of this population with employment in retail and other service-oriented jobs. Most jobs created by EITC expenditures are of the low- to middle-income variety—employees who may be eligible for the EITC themselves.

---

[1] All dollar amounts are expressed in present value, 2006 dollars.
[2] Job values are expressed as full-time equivalents (FTE's).

- An estimated $19.86 million in EITC returns were "left on the table" in Nashville during 2005. The unrealized economic stimulus to Nashville was $17.3 million. Over the eight-year period studied these unrealized economic returns have totaled $128 million, which could have sustained approximately 167 additional jobs each year. There is considerable room to improve on EITC participation in Nashville; investment in local programs that increase EITC participation will yield valuable and measurable economic returns.

- Geostatistical analyses have revealed a concentrated band, termed the "65-24 Corridor," of EITC households that stretches approximately fifty highway miles from northeast Nashville to Murfreesboro, TN. The Corridor receives 40.9 percent of total EITC dollars in the MSA despite having only 30.5 percent of the MSA's taxpayer population.

- Zip codes in west and northwest Nashville have displayed consistent negative growth in real credit amounts year-over-year during the periods studied. Conversely, southeast Nashville zip codes have displayed consistent positive growth in real credit amounts year-over-year.

- Every county in the MSA was more dependent, as a percentage of the total tax-paying population, on the EITC in TY 2003 than they were in TY 1997. Growth in EITC dependency was especially prevalent in the 65-24 corridor. Only 15 of the 141 zip codes in the MSA grew less dependent on the EITC.

TABLE OF CONTENTS

1.   **INTRODUCTION**

The author was retained by the Nashville Wealth Building Alliance to analyze the impact of payments received by Nashville residents through the Earned Income Tax Credit (EITC) on the economies of Davidson County-Nashville and the Nashville Metropolitan Statistical Area (MSA). The study's focal point was later expanded to include a geographic analysis of Nashville's EITC recipients.

The researcher used time-series data of local EITC payments over eight tax years (1997 to 2004) to look at trends in credit amounts and their economic impacts over time. The goal of the longitudinal approach was (1) to show the accumulated economic benefits of the policy over time, (2) to elucidate trends in local EITC disbursements through a regular business cycle, and (3) to assess changes in the geographic distribution of Nashville's working-poor population.

The amount of EITC dollars "left on the table" (unclaimed by eligible residents) over these years was also estimated. The impact of these unclaimed dollars was analyzed for the potential impact on the city's economy. The potential economic impact of unclaimed credits was studied to estimate the return on government and private-sector investment in programs that work to capture these additional funds.

Section 2 of the report reviews important developments in recent American history that pertain to the EITC specifically and anti-poverty programs in general. The review will focus on (1) the parallels between American economic thought and politics and their effect on anti-poverty policies; (2) the economic rationale behind the EITC's structure; and (3) reforms that secured the country's long-term commitment to the EITC.

Section 3 will concentrate on previous work to assess the EITC's effect on recipient spending and saving decisions—in short, its efficacy as a policy of poverty-reduction and fiscal stimulus. The section pulls from a variety of study frameworks, including: (1) Macro-economic studies concerned with aggregate changes in national economic activity due to credit disbursement; (2) microeconomic studies that observe changes in the expenditure patterns of individual households during disbursement; and (3) regional/metropolitan economic impact assessments such as this, which precisely model how and to what extent EITC dollars create value in a local economy.

Section 4 contains the analysis of the credit's impact to the Davidson County-Nashville and Nashville MSA economies from 1998 to 2004. This analysis includes year-to-year data on EITC disbursements to local residents, representing direct impacts to the local economy that are the foundation of the economic model. Indirect and induced impacts are then calculated, and the EITC's total economic stimulus is discussed in terms of general economic activity, value-added activity, employment growth, sector-specific impacts, and tax revenue.

Section 5 estimates the value of credits that local residents fail to claim and follows the same procedure in Section 4, modeling their direct, indirect and induced economic impacts. The total economic impact of full participation in the EITC locally is compared to the impact of actual participation in deriving unrealized economic stimulus.

Section 6 analyzes the geographic distribution of EITC recipients in Nashville. A series of geo-statistical analyses are performed to ascertain where in the MSA EITC dollars are currently going, including the identification of EITC hot spots, and changes in geographic distributions of the working poor over time. The data can be used to facilitate the concentration of EITC- and poverty-related program efforts where they are need most. The analyses also provide insight into the possible gentrification and worsening poverty in certain Nashville zip codes.

2. POLITICAL AND ECONOMIC FOUNDATIONS OF THE ETIC

With several expansions of the tax credit in the 1980's and 1990's, the EITC has become the largest federal aid program targeting the working poor. Along with food stamps and Temporary Assistance for Needy Families (TANF), the EITC is among the three largest federal income support programs and brings more children above the poverty line than any other federal program (MBTPI 2000). In addition to the federal EITC, 16 states and the District of Columbia have added their own state EITC programs.

The debate that would give birth to the EITC originated from a socially-tumultuous period during the 1960s that was characterized by increasing welfare dependency, high unemployment and a costly war. Though President Lyndon Johnson was a firm believer in the government's role to actively reduce poverty, he would come to oppose status-quo solutions of guaranteeing personal incomes on grounds that they undermined work efforts (Ventry 2001). The EITC emerged in the 1970's as American policymakers—influenced by economists like Milton Friedman and a rebirth of their classical thinking—would undergo a major paradigm shift in their thinking about why poverty exists and how it should be targeted. Political momentum shifted from traditional welfare entitlements to programs that boosted the incentives of impoverished families to enter the labor force, all the while guaranteeing a more stable income from year to year. The political story of the EITC begins with consolidation of welfare under Franklin Delano Roosevelt, welfare expansions under Kennedy, the War on Poverty conceived under Kennedy and later enacted by Johnson, and the failure of Richard Nixon's Family Assistance Plan (FAP).

During the height of the Great Depression, Franklin Delano Roosevelt's administration responded to economic, social and political upheaval by creating a federal safety net of social programs. The 1935 Social Security Act consolidated previous state-level programs that supported children of wartime widows into a single federal program. The Aid to Dependent Children (ADC), or welfare, program provided benefits to the children of all war widows in participating states. By 1939, all but eight states had voluntarily joined the program, which was administered by state and local governments. A state funded the program at a level of its choosing and the federal government supplemented state funds with 50 percent more. During the 1950s the welfare roles expanded by 17 percent (Neuberg 2004).

During a presidential campaign swing through West Virginia in 1960, Senator John F. Kennedy was shaken by his encounter with extensive poverty in Appalachia. After narrowly defeating Richard Nixon, Kennedy got Congress to add support for an unemployed parent to the ADC program and changed the name to Aid to Families with Dependent Children – Unemployed Parent (AFDC-UP). In 1962 Congress added funds for a second caretaker parent and changed the name to Aid to Families with Dependent Children (AFDC). From 1960 to 1964 the number of those served by welfare programs rose by 31 percent (Neuberg 2004).

In 1962 Kennedy would ask Walter Heller, his Chairman of the Council of Economic Advisors, for a copy of Michael Harrington's newly published *The Other America*. The book analyzed the depth and extent of poverty in the United States in considerable detail. Heller recommended Kennedy declare a war on poverty and authorize Administration economic

planners to design initiatives to fight the war. Three days before his assassination, Kennedy told Heller to move forward with such a program (Neuberg 2004). President Lyndon Johnson would pick up the reins year later.

In 1962 the politically conservative economist Milton Friedman would write his seminal work, *Capitalism and Freedom*, in which he proposed a negative income tax (NIT) to alleviate poverty. While working for the U.S. Treasury Department in the late 1940s and early 1950s, he noticed that incomes of low-income individuals fluctuated wildly from year to year. He ruminated about a government program to smooth out their income and proposed the NIT, a version of which became the economic center of Nixon's 1969 FAP proposal.

Under Friedman's NIT, government would guarantee a minimum income for each individual and establish a negative income tax rate to tax the earned income of those eligible for payments (people earning below $2,000). The size of the payment would be the guaranteed minimum income, minus the negative income tax rate times the individual's earnings. In the summer of 1965, economists at Lyndon Johnson's Office of Economic Opportunity (OEO)—headquarters for the War on Poverty—developed an NIT plan and presented it to the Bureau of the Budget. However, an NIT "was not regarded as a serious proposal that could be enacted in less than a decade."

The debates surrounding the NIT and President Nixon's Family Assistance Plan (FAP) illuminate the transitional period between the perceived social ills of poverty on one hand and welfare dependency on the other. The fight over FAP alerted politicians to how the tax policy could alleviate or perpetuate social problems, and then spawned alternative tax-transfer proposals such as the Earned Income Tax Credit (Ventry 2001).

The EITC began as part of Senator Russell Long's (D-LA) effort to derail Congressional and Presidential interest in a negative income tax (NIT). The attraction of the NIT was that it would provide a guaranteed minimal standard of living through an administratively-efficient tax system, "without having the notches and high cumulative marginal tax rates that characterize a patchwork system of narrower programs" (Hotz, 2002). Senator Long opposed the NIT because it provided its largest benefits to those without any earnings (Hotz, 2002).

Enacted in 1975 as a refundable tax offset for low-income workers, the EITC "appeared to politicians an attractive, work-oriented alternative to existing welfare programs. It was both an anti-poverty and anti-welfare instrument. It complemented national concerns over welfare caseloads, unemployment rates, and the working poor." (Ventry, 2001, p. 983). President Reagan called it "the best anti-poverty, best pro-family, best job-creation measure to come out of Congress."

The EITC remains politically acceptable for several reasons. First, the EITC is not a traditional entitlement program. The credit is for families and individuals earning low incomes. In order to claim it, the person must be working. The EITC was designed to have three stages in order to mitigate negative incentives to remain un- or under-employed and, once employed, tied to the credit. "Relative to welfare that pays the highest benefits to those with no earnings or income… the credit… has been designed to provide a maximum benefit at income levels

approximating a full-time, minimum- wage job" (Steuerle, 1995). At the phase-in stage, the amount of the credit increases as earned income increases. At the plateau stage, income increases but the credit remains the same. During the phase-out stage, the amount of the credit decreases as the amount of income earned increases. The marital status, number of children claimed, and income of the taxpayer determine the overall amount of the credit.

Second, the EITC is seen as a targeted program that reduces taxes but raises pay. This is in contrast to policies like the minimum wage, which is not well targeted, and provides higher wages to teenage workers, second-income earners, and other workers in non-poor households (Jacob France Institute, 2004). When it was originally designed, the EITC applied only to low-income working families with children. Since then, it has been expanded to include persons with no children that earn low incomes. Similar to other tax credits, the EITC reduces the amount of the income tax owed, but unlike other tax credits, the EITC is refundable. That means that if the amount of the tax credit exceeds tax liability, the remaining credit is returned to the taxpayer. If a taxpayer has no tax liability, the entire EITC can still be claimed in the form of a tax refund.

Finally, the EITC is extremely efficient. Unlike other federal assistance programs, the EITC is implemented through the Internal Revenue Service (IRS). This produces several important benefits. First, administrative costs for traditional cash assistance programs and food stamps can run as high as 15 percent, whereas the administrative cost of the EITC is roughly 1 percent. Second, the EITC's incorporation into tax preparations means that the program has high visibility to those qualified. According to a General Accounting Office study, the EITC has an estimated overall participation rate of 75 percent nationwide, with an even greater rate of participation among families with one or two children. Third, IRS administration does not raise employer costs. An employer does not have to file any documentation for an employee claiming the tax credit. State EITC programs, with the exception of Minnesota, calculate their tax credit as a percentage of the federal credit, making state EITC programs easy to administer.

3.   THE EITC AS A BEHAVIOR-CHANGING POLICY, FISCAL STIMULUS: A SURVEY OF THE LITERATURE

Haskell et al. (2005) performed a comprehensive literature review on the various frameworks used previously for assessing the economic impacts of the EITC. The study assumed a broad definition of "economic impact assessment" in collecting relevant literature. The authors categorized the studies according to the target assessment variable(s) and types of data used. The review found a wide spectrum of definitions of, and frameworks for, an economic impact assessment.

Previous impact studies for the EITC can be grouped into three categories: the macroeconomic behavioral impact study, the microeconomic or household behavioral impact study, and the regional/metropolitan economic impact assessment.

The first two categories assess the efficacy of the credit in achieving the instrument's policy goals; the EITC's effect on co-variants like recipient employment, poverty, savings, and debt are among the variables studied. The study types differ in their methodologies. Macro studies use highly-aggregated national data to regress EITC disbursements against various saving and consumption indicators in order to quantify, for example, the credit's effect on labor force participation. Micro studies attempt the same feat but instead utilize surveys of individual households to assess changes in their spending decisions. While most respected studies stick to purely quantitative analysis, there are at least two household-level EITC studies that use a more qualitative, sociological approach in systematically collecting and coding anecdotal evidence on the EITC's effect on family wellbeing.

The last category of studies uses regional economic data to model the EITC's affect on a local economy. These studies ask how the transfer of millions of dollars, from the federal government to an area's low- to middle-income population, affects the local economy.

3.1   Credit Efficacy: Effects on Poverty, Work, Spending and Savings

a)   Poverty

The EITC is an effective tool for reducing the number of persons, both adults and children, living in poverty. A Brookings Institution study in 2003 found that in 27 urban and rural areas nationwide the EITC boosted the annual incomes of families an average of $1,700 or 13 percent. This boost in income pushed both individuals, many whom are children, and families above the poverty line. In 1998, Current Population Survey data showed that the EITC lifted 4.8 million persons, of which 2.6 million were children, above the poverty line. *No government program lifts more children out of poverty than the EITC*. With the addition of state EITC programs, the number of persons, families, and children raised above the poverty line increases markedly.

b)   Labor Force Participation

The EITC has been found to have a positive effect upon labor force participation. The EITC provides additional incentives for non-workers to enter the labor force, thereby having lasting effects like limiting long-term unemployment and building human capital. Research completed by Liebman (1997) found that from 1984 to 1996 the labor force participation rate of single women with children increased from 73 percent to 82 percent and that the EITC was responsible for 60 percent of this increase. In other words, the EITC induced 20 percent of single women with children not previously working to begin working.

The EITC expansion of 1993 is estimated to have increased the labor force participation rate of single parent families by over 3 percent due to the EITC impact on net wages (Dickert, Hauser & Scholz, 1994). The expansion of the credit in 1993 increased the net wages of low-income, single parents by a total of 15 percent. These effects are magnified by the addition of state and local EITC programs.

c)   Savings and Spending Decisions

Edwards (2004) studied the macroeconomic effects of annual aggregate EITC disbursements in the national economy. The shifting seasonality and growth of annual EITC payments from three billion in 1988 to thirty billion in 2000 (a fifteen percent annual rate since 1993) has allowed Edwards to draw EITC-related stimulus from macroeconomic indicators. Edwards' research identifies an immediate, "large and robust" macroeconomic consumption response, with estimates of the marginal propensity to consume of EITC payments ranging between 0.4 and 1 and averaging 0.7. In other words, the average EITC-recipient in the U.S. immediately spends about 70 percent of their check. EITC payments were found to stimulate durable and nondurable spending fairly equally, while there was mixed evidence regarding spending on services.

This EITC consumption rate outpaces the economy-wide marginal propensity to consume found by Campbell and Mankiw (1990), averaging 0.5 in a comparable quarter. It was also found that EITC payments produced a more significant macroeconomic consumption stimulus than personal income tax refunds. In line with other studies (i.e. Shapiro and Slemrod [2003]), Edwards estimated an MPC of just over 20 percent for personal income tax refunds. These results suggest that the EITC is a powerful tool for fiscal stimulus because EITC recipients are disproportionately spenders rather than savers, spending their payments at a higher rate than the economy-wide marginal propensity to consume and personal income tax refunds marginal propensity to consume. As such, Edwards' concludes that the EITC is a more effective fiscal stimulant than broad-based tax returns.

Barrow and McGranahan (1999) used monthly household data from the Consumer Expenditure Survey to establish important behavioral implications of EITC refunds. Since 1979, EITC recipients have been eligible to spread a portion of their credit evenly across the calendar year. This provision, called the Advanced EITC, has experienced very low levels of participation; in 1996, Advanced EITC payments amounted to only 1 percent of returns. The

overwhelming recipient preference for the lump-sum payment led Barrow and McGranahan to study recipient spending patterns in order to make sense of this apparent violation of behavioral economic theory and the time-value of money.

The authors looked at whether the lump-sum nature of EITC payments induced changes in normal spending patterns among recipients, focusing on changes in the seasonal pattern of durable goods expenditures. It was hypothesized that the substantial size of the available lump-sum EITC refund check assists low-income consumers in purchasing big-ticket items. For example, while the average EITC refund in 1996 was slightly over $1500, the average AFDC monthly check was $374, and the average monthly SSI benefit was $363. Durable good purchases should comprise a smaller portion of income expenditure from the more frequent, non-lump sum payments from employers or other government assistance programs. The EITC-durable goods hypothesis is supported by the fact that low-income individuals have limited access to credit and formal financial markets to accrue the lump sums necessary for larger purchases. For individuals with limited ability to store money safely, the lump-sum EITC payment serves as a safe mechanism for savings to enable more substantial purchases.

It was found that the EITC refund induces increased levels of total spending (particularly on durable goods) during the tax-filing season. EITC households spent approximately four percent more during February, when most refunds are received, and between 10 to 12 percent more on durable goods. This supports the conjecture that the EITC facilitates the purchasing of big-ticket items by low-income families. At the same time, these estimates suggest that recipients reduce expenditure somewhat since the average increase in expenditure is less than the average EITC refund amount. A low-end estimate has EITC families spending approximately one-third of their refund in February.

The study found these spending increases to be independent of macroeconomic trends and concludes that the increases in the total spending and durable goods expenditures of EITC recipients are due to the lump-sum refund. In comparison with non-recipients, EITC recipients have different seasonal spending patterns. The CES data demonstrates that recipients consume more in February, relative to non-recipients, than in any other month. The other major EITC month, March, appears to have more typical spending patterns.

Smeeding, Ross & O'Connor (2000) used a more qualitative, sociological approach to survey a sample of Chicago-area households with children on their knowledge and use of the EITC. The sample filed returns in the winter and spring of 1998 for the 1997 EITC. Respondents reported in detail about using their federal tax refunds (including the EITC) to pay bills, purchase new items, or save. Data were also gathered on respondents' prior knowledge of the EITC and their ability to make particular expenditures without the help of the EITC. Uses of the EITC are divided into those that improve economic and social mobility (e.g., purchase a car, pay tuition, change residence) and those that primarily help to make ends meet (e.g., pay routine bills, purchase food).

The researchers ranked the categories in terms of importance according to the beneficiaries. Bill-paying was the single most important use of the EITC for nearly half of all beneficiaries and making purchases ranked second. Approximately eighty percent of

respondents said they would use the EITC to pay a bill or make a purchase of some commodity. However, half of all beneficiaries have social mobility-related prospects for the EITC refund. Half said they would save some or all of their EITC check, sixteen percent of stated they would use the funds to pay for tuition, and twenty-two percent would make car-related purchases.

The study also examined differences in EITC spending patterns based on race and social factors. For example, "single parenting, being Hispanic, expecting a refund, and having access to credit all increase the likelihood of having a social mobility use for the refund." Furthermore, "single parents are twice as likely as married parents to use the refund for improving social mobility. Hispanics are 2.4 times more likely than Whites to use the funds for improving social mobility. Recipients who expected their refund are more than 2.2 times more likely to have social mobility use for a portion of their refund than recipients who do not expect a refund." The study also concluded that for each $1,000 of EITC credit, the recipient is 1.24 times more likely to use the funds for social mobility.

Romich and Weisner (2000), the other qualitative study, collected and analyzed ethnographic data on 42 families' perceptions and uses of the EITC, including the decision to use the lump sum or advanced payment form. The study collected intensive qualitative data by interviewing urban low-income families in Milwaukee, Wisconsin over the course of two years and two EITC refund periods. The study was undertaken in response to questions about whether EITC refunds were being used as intended by policymakers. In an event publicizing the administration's role in expanding the EITC in 1993, President Clinton celebrated the EITC's objectives, "[it is] not about more government or social workers, or more services. It's about more groceries and a car, more school clothes for kids and more encouragement and hope to keep doing the right thing." A primary question of this study: Are low-income families purchasing the projected groceries, cars and school clothes?

The study's qualitative data on EITC expenditures supports the quantitative data of Barrow and McGranahan (1999). It was observed that durable good purchases were much more frequent with lump-sum EITC checks than general expenditures. Furniture was found to be the most common post-tax check purchase, with sixty percent of the families buying couches, tables, beds, or other furniture. Appliances were another necessary asset because inexpensive Milwaukee apartments generally rent without stoves, refrigerators, washers or dryers. Twenty-nice percent reported purchasing entertainment equipment such as televisions, radios, and videos. Transportation and housing are the next two most common uses of the credit; just over one-quarter of the sample used or planned to use the credit on a car (included buying cars outright, making a substantial down payment or repairing current cars).

The authors also focused on the prevalence of child-specific purchases over non-child purchases. Two-thirds of the parents in the sample cite expenditures on children as a top priority. Among the eight families who did not mention buying items for children, four were using the check as a lump-sum down payment on a house or a car. Most child-oriented expenditures were on non-durables. Clothes were the most commonly cited child-specific purchase. As the mother of two children (one in preschool and one in kindergarten) explained:

> When my taxes come… I'll take the kids shopping because my kids really need to go shopping, especially [my older son]. He has no clothes. He needs clothes… Once I get the money, you know send in all the papers – my W2 thing. I [am] most definitely going shopping for my son. Go to Wal-Mart and Kmart and just stock up.

The researchers continue, "For this mother, the lump sum payment enabled the purchase of a child's wardrobe—a full set of socks, underwear and school uniforms—rather than a few items at a time." Other child-specific uses are to pay private school tuition (three instances) and to establish savings accounts in a child's name (two instances). People also take joy in giving their kids "fun money" or to take the family out for a special treat.

Not to be overlooked are those EITC families that do not have their income taxes refunded. Six households (fourteen percent) had their EITC garnished automatically in one or both years due to outstanding debts incurred in government-administered programs such as student loans, back taxes, or convictions for welfare fraud.

In looking at savings, the study found that most families spent their entire EITC refund within two months of receiving the check; thirty-two percent had a portion of their EITC refund two or more months after receiving the check. When asked why this money was being saved, families either had large saving goals or were keeping the money for future emergencies. This savings behavior is generally in-line with the findings of Barrow and McGranahan (1999), who found EITC recipients have some preference for spreading out their expenditures; only one-third of recipients spent the entire check in February.

3.2   Economic Stimulus: Regional/Metropolitan Economic Impact Assessments

Regional/metropolitan economic impact assessments for the EITC have been performed in three cities: San Antonio, Baltimore, and in the following pages, Nashville. The studies quantify EITC-related stimulus to their respective metropolitan study areas using a regional input-output modeling system called IMPLAN. Input-output accounting describes commodity flows from producers to intermediate and final consumers. It assesses the "ripple effect" of direct expenditures into a local economy from a source such as EITC disbursements.

An example of the ripple effect can be seen in the family that uses their EITC check to purchase a new washer and dryer at a local retail outlet. The direct effect is the payment made to the retailer, but the retailer will have to replace his inventory by purchasing additional washers and dryers. These appliances might be shipped using a local carrier or perhaps (though not likely in this case) manufactured in or with parts from the local economy. If business is really good, the retailer and downstream industries may have to hire more employees, who in turn receive expendable income that enters the local economy. These downstream expenditures to meet the increased demand for finished goods are the ripple effects of the economic stimulus.

All three studies use the same regional economy modeling framework, the IMPLAN input-output model. However, the studies differ greatly in their construction of the IMPLAN model and interpretation of the model output; in fact, the multipliers in the Baltimore and San Antonio studies seem extremely unrealistic, given the high rate of output leakages associated

with general consumption expenditures in any metropolitan economy study area. While the outside observer cannot deduce (from the information each study provides) exactly why these numbers became so extraordinary, we do know there exists no metropolitan economy in United States that could sustain a multiplier of 1.44 (Baltimore City study) or 1.58 (San Antonio study) for a general consumption event. The misconstruction or misinterpretation of the IMPLAN model, leading to large direct impact multipliers, has been corroborated by the IMPLAN modeling platform proprietor, IMPLAN Minnesota, Inc. The author benefited from the foresight of these previous mistakes and, with close instruction from the model's proprietor, understood how to properly construct and interpret IMPLAN models for the particular type of impact, a general consumption event. The final direct-total impact multiplier for Nashville was a much more digestible 1.07.

This discussion of intra-model multiplier inaccuracies does not include extra-model assumptions that determine what percentage of the EITC amount becomes a direct impact. In this area, the Baltimore City study was probably too cautious given the empirical data on low-income family spending and savings. The credit amount-total impact multiplier for Baltimore City was only 0.66, compared with the 0.88 found in the current Nashville study. As such, the final numbers for direct, total impact and employment in Baltimore City are likely underestimated; further, problems internal to their regional economy model have produced total-to-direct multipliers that are uncharacteristic of a general consumption even. There is not enough disclosure in the San Antonio study to determine its initial assumptions but, regardless, the study's model output (everything beyond the direct impact) must be invalidated for the same reasons.

Table 3.1a: Comparison of Regional/Metropolitan Economic Impact Studies using IMPLAN I-O Models ("Impact" = Economic Output, "PV" = Present Value)

Study Area	EITC Filers	Tax Year	Author	Fed EITC Credit Amount (PV)	Direct Impact (PV)	Total Impact (PV)	Multiplier: Total Impact to Credit Amt	Multiplier: Total to Direct Impact	Total Employment Sustained
Baltimore City	73,348	2002	Jacobs France Institute, Univ. of Baltimore	$142,694,819	$65,300,510	$93,899,673	0.66	1.44	894
" Unclaimed	18,337	"	"	$26,755,278	$12,243,846	$17,606,189	"	"	168
" Total Possible	91,685	"	"	$169,450,097	$77,544,356	$111,505,862	"	"	1,062
San Antonio [1]	133,972	2004	Texas Perspectives	$249,872,615	$167,586,000	$264,180,000	1.06	1.58	4,467
" Unclaimed	30,412	"	"	$56,721,084	$38,003,125	$59,959,844	"	"	1,014
" Total Possible	164,384	"	"	$306,593,699	$205,589,125	$324,139,844	"	"	5,481
Davidson County-Nashville [2]	51,933	2004	John Haskell, Vanderbilt University	$93,621,173	$76,769,362	$81,782,661	0.88	1.07	708
" Unclaimed	9,737	"	"	$17,553,970	$14,394,255	$15,329,882	"	"	144
" Total Possible	61,670	"	"	$111,175,143	$91,163,617	$97,112,543	"	"	852
Nashville MSA	104,666	2004	John Haskell, Vanderbilt University	$186,979,027	$162,671,754	$173,245,418	0.93	1.07	1,630
" Unclaimed	19,625	"	"	$35,058,568	$30,500,954	$32,483,516	"	"	306
" Total Possible	124,291	"	"	$222,037,595	$193,172,708	$205,728,934	"	"	1,936

1   The study area was not specified beyond the term "San Antonio." This could be a one-county or multi-county, MSA analysis.
2   Study analyzed EITC time-series data from TY 1997-2004. The latest tax year studied (2004) is used as the comparison base for both Davidson County-Nashville and the Nashville MSA.

4. THE EITC'S ECONOMIC IMPACT TO NASHVILLE

The expenditures of EITC payments to Nashville residents are circulated within the city's economy and become income for both residents and businesses. Anecdotal evidence suggests the federal EITC has a robust impact on Nashville businesses, especially retailers. Commercials for various retail operations—from car speakers to jewelry resellers—frequent the radio waves during tax season in Nashville, luring recipients to spend their "EITC checks" at special, week-long promotional events and other extravaganzas. Based on the empirical evidence, it could be argued that "EITC season" rivals the Christmas season in low-income neighborhoods, one of few periods during the year where low-income families have a substantial lump sum with which to buy bigger-ticket items (Barrow & McGranahan, 1999; Romich & Weisner, 2000).

These EITC expenditures create "multiplier" effects as the money is spent and re-spent within the economy. Thus each new dollar of local spending can create more than one dollar in local economic impact, as that spending is earned and spent again by others within the region. An input-output economic model is utilized to analyze these intra-economy relationships. The model allows us to determine, with a high degree of specificity, how EITC dollars are transferred between local household, industry and government institutions.

While raw EITC data for both study areas is explored in this section in order to make comparisons, the ultimate focus is on the EITC's economic impact to Davidson County-Nashville; the full impact analysis for the MSA can be found in the Appendix.

4.1   Assumptions

Whether or not the total economic impact exceeds the original EITC expenditure depends primarily on the type and frequency of leakages from the local economy. The largest leakages on the initial expenditure are savings withheld and dollars spent outside of the local economy (domestic and foreign trade). Accounting for initial expenditure leakages requires a set of assumptions by the researcher, while leakages beyond the direct impact are extrapolated from robust empirical data on inter-economy relationships.

The author assumed 82 percent of Davidson County-Nashville EITC disbursements would be spent in that region, while the rate of Nashville MSA expenditures would be 87 percent. The models use different rates of outside expenditure (15 percent and 10 percent, respectively) to account for the MSA's larger study area that includes inter-county trade; this trade is counted as non-local, domestic trade in the Davidson County-Nashville model. Both models assume a savings rate of 3 percent on EITC disbursements. The savings and expenditures assumptions are safe estimates, considering the lower mobility of low-income households and empirical studies that find an overall negative savings rate for the income class.

A second set of assumptions are required to determine how the initial tax credits will be spent in the local economy—after outside expenditures and savings are removed. The study assumed EITC dollars would be spent on a pattern similar to general low-income (15k to 25k) household expenditures. Industry sector ratios that define how these households spend each dollar were obtained from the 2003 Consumer Expenditure Survey.

Once the level of initial spending in the economy was ascertained, the expenditures were entered into an economic input-output model to determine their affect on variables like economic output, employment, and earnings.

4.2   Credit Amounts Claimed and Disbursed

The author used federal EITC payments data for Davidson County-Nashville and the Nashville MSA, provided by the Brookings Institution (TY 1997-2003) and the IRS (TY 2004), to calculate the EITC's impact on the Nashville economy. Tables 4.2a and 4.2b provide the amounts of annual EITC payments over the eight tax years in the two regions studied. Credit amounts reflect that which is claimed by EITC-eligible families. Credit disbursements reflect the amount of those dollars actually disbursed after federal withholdings are subtracted. The national average rate of EITC withholding (13 percent) was used to calculate disbursements. Section 4.3 on direct impacts will adjust disbursement amounts for the savings and expenditure assumptions discussed above.

Credit amounts in both areas have shown consistent nominal growth year-over-year. When adjusted for inflation, however, credit amounts have generally tracked the business cycle with a trough during TY year 2000 and high in TY 2004, the most recent year for which data is available. Graphs 4.2c and 4.2d plot credit and disbursement amounts for the Davidson County and MSA study areas along with their 10-year outlook under linear growth. The average annual real growth rate for Davidson County-Nashville credits over the eight-year period studied was 1.3 percent; this compares with 2.2 percent real marginal growth in the MSA. The difference in growth rates suggests rural populations are becoming poorer relative to urban populations. Questions of unequal geographic EITC growth and gentrification in Nashville are explored more in depth in section five.

**Table 4.2a: Credit Amounts Claimed & EITC Amount Disbursed in Davidson County-Nashville, TY 1997-2004**

Tax Year	Year of Impact	Credit Amount, Nominal	Credit Amount, Real (2006 $)	Disbursements, Nominal	Disbursements, Real (2006 $)
1997	1998	$70,007,000	$86,108,610	$60,906,090	$74,914,491
1998	1999	$68,797,000	$82,556,400	$59,853,390	$71,824,068
1999	2000	$70,639,823	$81,942,195	$61,456,646	$71,289,709
2000	2001	$71,093,015	$80,335,107	$61,850,923	$69,891,543
2001	2002	$73,878,948	$82,005,632	$64,274,685	$71,344,900
2002	2003	$82,608,974	$90,043,782	$71,869,807	$78,338,090
2003	2004	$86,834,401	$92,044,465	$75,545,929	$80,078,685
2004*	2005	$91,785,464	$93,621,173	$79,853,353	$81,450,421
		Total	**$688,657,364**		**$599,131,906**

Source: Nominal credit amounts from Brookings Institution, Internal Revenue Service
* 2004 uses IRS data adjusted for differences in Brookings methodology

Table 4.2b: Credit Amounts Claimed & EITC Amount Disbursed in the Nashville MSA, TY 1997-2004

Tax Year	Year of Impact	Credit Amount, Nominal	Credit Amount, Real (2006 $)	Disbursements, Nominal	Disbursements, Real (2006 $)
1997	1998	$131,208,000	$161,385,840	$114,150,960	$140,405,681
1998	1999	$131,054,000	$157,264,800	$114,016,980	$136,820,376
1999	2000	$133,904,304	$155,328,993	$116,496,744	$135,136,224
2000	2001	$137,163,710	$154,994,992	$119,332,428	$134,845,643
2001	2002	$144,324,379	$160,200,061	$125,562,210	$139,374,053
2002	2003	$165,332,767	$180,212,716	$143,839,507	$156,785,063
2003	2004	$174,321,442	$184,780,729	$151,659,655	$160,759,234
2004*	2005	$183,312,772	$186,979,027	$159,482,111	$162,671,754
		Total	**$1,341,147,157**		**$1,166,798,027**

Graph 4.2c: Credit Amounts, Disbursements (2006 $) in Davidson County-Nashville with 10-Year Outlook
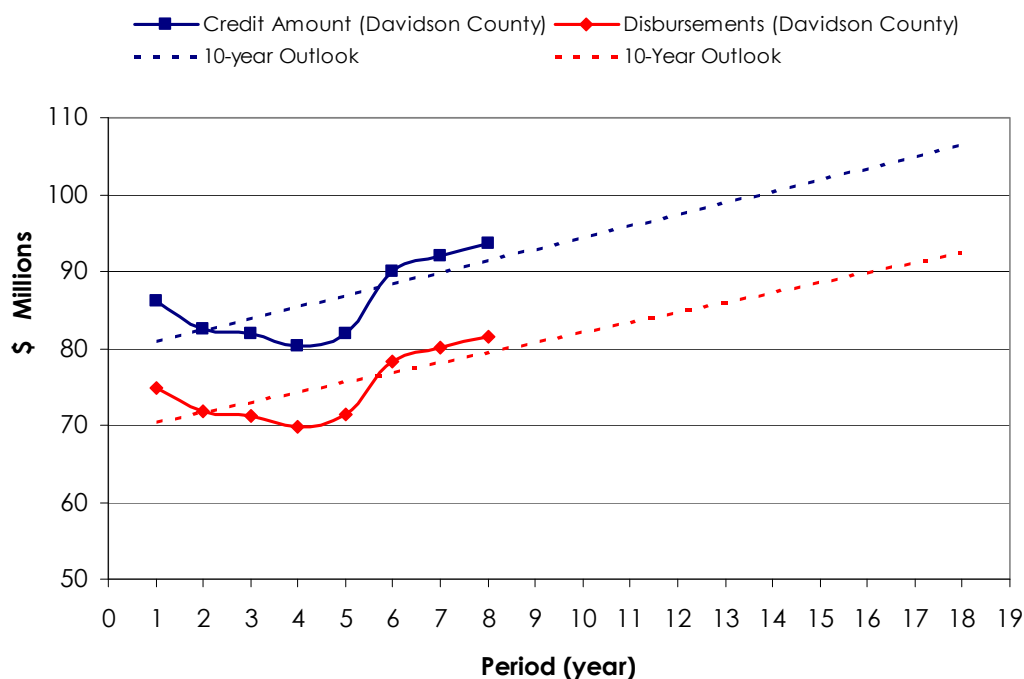
Graph 4.2d: Credit Amounts, Disbursements (2006 $) in Nashville MSA with 10-Year Outlook
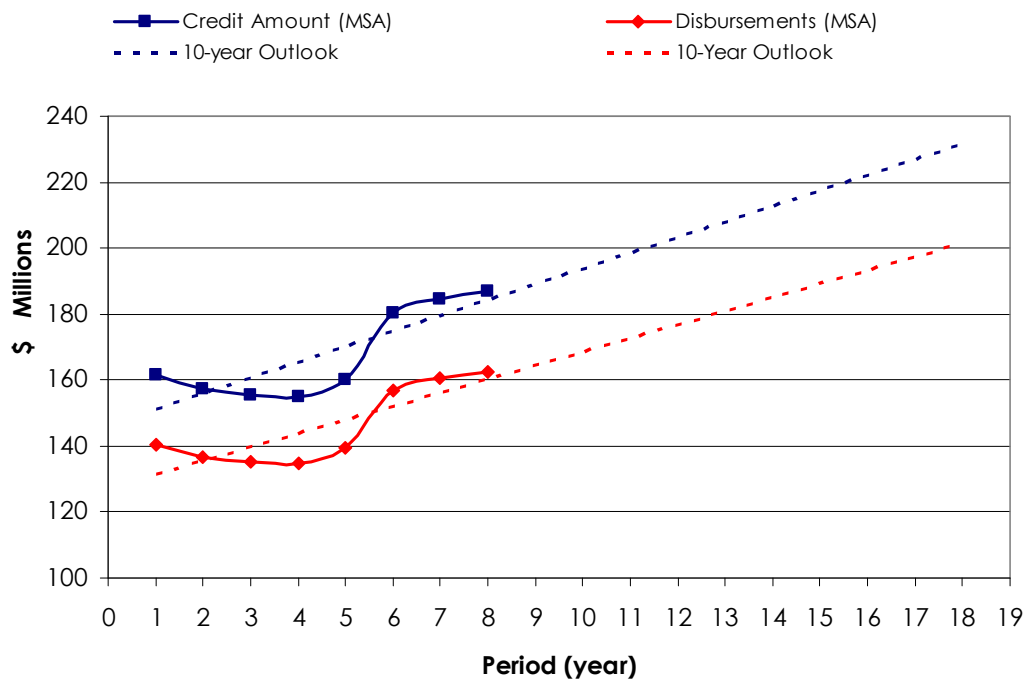
4.3   Direct Impacts: Initial Spending and Leakages

Direct impacts are the changes in a regional economy induced by an isolated stimulus or transaction. In this model, federal EITC disbursements induce low-income household expenditures that would not exist otherwise. In arriving at the direct impact, or initial EITC spending allocation, there are two sets of assumptions, as discussed in section 4.1. First, EITC disbursements must be adjusted for the initial expenditure and savings leakages. Second, the researcher must determine how EITC recipients will spend the money (or, to what industries the spending will go) within the study area economy.

A final step in arriving at the direct impact adjusts the aggregated direct impact dollar amount for "advanced" spending and savings decisions. The EITC is subsidizing recipient savings and expenditures done in advance of receiving that year's credit, as reflected by 13 percent annual average rate of federal withholding of EITC credits. The federal government withholds part of each year's tax credit in order to account for a previous year's tax liability that was held by the taxpayer instead of paying it to the IRS. Thus, the concept of advanced spending is introduced into the model to account for spending "allowed" by the EITC credit.

For example, in the Davidson County study area, the aggregate direct impact in any year is arrived at by subtracting from that year's credit amount (which includes federal withholding amount) the current savings (3 percent of disbursements), advanced savings (3 percent of withholdings), current outside expenditures (15 percent of disbursements), and advanced outside expenditures (15 percent of withholdings). In effect, federally withheld money is treated the same as the credit amount actually disbursed.

Tables 4.3a-c and 4.3d-f show the aggregated direct impact accounting for Davidson County-Nashville and Nashville MSA study areas, respectively. The final adjusted direct impact in Davidson County-Nashville for TY2004 was approximately $76.8 million in 2006 dollars. The final adjusted direct impact in the Nashville MSA for TY 2004 was approximately $162.7 million in 2006 dollars. Time series direct impact totals for Davidson County and the MSA were $564.7 and $1,166.8 million respectively.

Before running the impact model to determine indirect and multiplier effects of the initial spending described above, the initial spending is allocated according to the expenditures of low-income households with an income from 15k-25k. This data is provided from the 2003 Consumer Expenditure Survey. Table 4.3g is a high-level breakdown of initial industry expenditure ratios.

Table 4.3a: Davidson County-Nashville, Aggregate Direct Impact Accounting by Year, Savings

Tax Year	Year of Impact	Savings, Nominal	Savings, Real (2006 $)	Advanced Savings, Nominal	Advanced Savings, Real (2006 $)
1997	1998	$1,827,183	$2,247,435	$273,027	$335,824
1998	1999	$1,795,602	$2,154,722	$268,308	$321,970
1999	2000	$1,843,699	$2,138,691	$275,495	$319,575
2000	2001	$1,855,528	$2,096,746	$277,263	$313,307
2001	2002	$1,928,241	$2,140,347	$288,128	$319,822
2002	2003	$2,156,094	$2,350,143	$322,175	$351,171
2003	2004	$2,266,378	$2,402,361	$338,654	$358,973
2004*	2005	$2,395,601	$2,443,513	$357,963	$365,123
			$17,973,957		**$2,685,764**

Table 4.3b: Davidson County-Nashville, Aggregate Direct Impact Accounting by Year, Outside Expenditures

Tax Year	Year of Impact	Outside Expenditures, Nominal	Outside Expenditures, Real (2006 $)	Advanced Outside Expenditures, Nominal	Advanced Outside Expenditures, Real (2006 $)
1997	1998	$9,135,914	$11,237,174	$1,365,137	$1,679,118
1998	1999	$8,978,009	$10,773,610	$1,341,542	$1,609,850
1999	2000	$9,218,497	$10,693,456	$1,377,477	$1,597,873
2000	2001	$9,277,638	$10,483,731	$1,386,314	$1,566,535
2001	2002	$9,641,203	$10,701,735	$1,440,639	$1,599,110
2002	2003	$10,780,471	$11,750,714	$1,610,875	$1,755,854
2003	2004	$11,331,889	$12,011,803	$1,693,271	$1,794,867
2004*	2005	$11,978,003	$12,217,563	$1,789,817	$1,825,613
			$89,869,786		**$13,428,819**

Table 4.3c: Davidson County-Nashville, Aggregate Direct Impact Accounting by Year, Final Direct Impact

Tax Year	Year of Impact	Final Adjusted Direct Impact, Nominal	Final Adjusted Direct Impact, Real
1997	1998	$57,405,740	$70,609,060
1998	1999	$56,413,540	$67,696,248
1999	2000	$57,924,655	$67,192,600
2000	2001	$58,296,272	$65,874,788
2001	2002	$60,580,737	$67,244,618
2002	2003	$67,739,359	$73,835,901
2003	2004	$71,204,209	$75,476,461
2004*	2005	$75,264,080	$76,769,362
			$564,699,038

Table 4.3d: Nashville MSA, Aggregate Direct Impact Accounting by Year, Savings

Tax Year	Year of Impact	Savings, Nominal	Savings, Real (2006 $)	Advanced Savings, Nominal	Advanced Savings, Real (2006 $)
1997	1998	$3,424,529	$4,212,170	$511,711	$629,405
1998	1999	$3,420,509	$4,104,611	$511,111	$613,333
1999	2000	$3,494,902	$4,054,087	$522,227	$605,783
2000	2001	$3,579,973	$4,045,369	$534,938	$604,480
2001	2002	$3,766,866	$4,181,222	$562,865	$624,780
2002	2003	$4,315,185	$4,703,552	$644,798	$702,830
2003	2004	$4,549,790	$4,822,777	$679,854	$720,645
2004*	2005	$4,784,463	$4,880,153	$714,920	$729,218
			$35,003,941		**$5,230,474**

Table 4.3e: Nashville MSA, Aggregate Direct Impact Accounting by Year, Outside Expenditures

Tax Year	Year of Impact	Outside Expenditures, Nominal	Outside Expenditures, Real (2006 $)	Advanced Outside Expenditures, Nominal	Advanced Outside Expenditures, Real (2006 $)
1997	1998	$11,415,096	$14,040,568	$1,705,704	$2,098,016
1998	1999	$11,401,698	$13,682,038	$1,703,702	$2,044,442
1999	2000	$11,649,674	$13,513,622	$1,740,756	$2,019,277
2000	2001	$11,933,243	$13,484,564	$1,783,128	$2,014,935
2001	2002	$12,556,221	$13,937,405	$1,876,217	$2,082,601
2002	2003	$14,383,951	$15,678,506	$2,149,326	$2,342,765
2003	2004	**$15,165,965**	**$16,075,923**	**$2,266,179**	**$2,402,149**
2004*	2005	**$15,948,211**	**$16,267,175**	**$2,383,066**	**$2,430,727**
			$116,679,803		**$17,434,913**

Table 4.3f: Nashville MSA, Aggregate Direct Impact Accounting by Year, Final Adjusted Direct Impact

Tax Year	Year of Impact	Final Adjusted Direct Impact, Nominal	Final Adjusted Direct Impact, Real
1997	1998	$114,150,960	$140,405,681
1998	1999	$114,016,980	$136,820,376
1999	2000	$116,496,744	$135,136,224
2000	2001	$119,332,428	$134,845,643
2001	2002	$125,562,210	$139,374,053
2002	2003	$143,839,507	$156,785,063
2003	2004	$151,659,655	$160,759,234
2004*	2005	$159,482,111	$162,671,754
			$1,166,798,027

**Table 4.3g: Expenditure Allocations/Commodity Demand
for Low-Income Households (15k-25k)**

NAICS 2-Digit Industry Aggregates	$*	Per Dollar
11 Ag, Forestry, Fish & Hunting	10.164	0.00705
21 Mining	0.033	0.00002
22 Utilities	52.069	0.03612
23 Construction	0.000	0.00000
31-33 Manufacturing	242.785	0.16842
42 Wholesale Trade	64.390	0.04467
48-49 Transportation & Warehousing	29.669	0.02058
44-45 Retail trade	158.839	0.11019
51 Information	52.363	0.03632
52 Finance & insurance	98.017	0.06799
53 Real estate & rental	96.843	0.06718
54 Professional- scientific & tech svcs	22.637	0.01570
55 Management of companies	0.000	0.00000
56 Administrative & waste services	6.506	0.00451
61 Educational svcs	28.650	0.01987
62 Health & social services	285.986	0.19839
71 Arts- entertainment & recreation	23.840	0.01654
72 Accomodation & food services	62.531	0.04338
81 Other services	66.086	0.04584
92 Government & non NAICs	140.127	0.09721
Total	**1,441.536**	**1.00**

*Millions of dollars
Note: Demands are commodity based and include imports

4.4   Total Economic Impacts, Davidson County-Nashville

Total economic output and related impacts are arrived at by plugging the final adjusted direct impacts (table 4.4a) into an input-output model of the Nashville economy. The Davidson County-Nashville study area experienced approximately $170 million in transaction leakages after the initial impact over the eight years studied (table 4.4b). Most of these leaks ($159 million) were due to the purchasing of consumer goods manufactured outside of the Nashville economy.

When adjusted for transaction leakages, the total economic output impact to Nashville was approximately $603 million over the time series or $82 million in the latest tax year studied, 2004 (table 4.4c). By comparing the total local impact to the direct impact we arrive at the aggregate economic multiplier for EITC dollars in the study area. On average, the regional EITC spending multiplier was 1.07 over the series studied; for every EITC dollar of direct impact, we see that dollar plus an additional seven cents in local output returns. If we make the comparison between total local impact and non-adjusted EITC credits, we arrive at the local output multiplier for the credit amounts. On average, the credit multiplier was 0.88; for every credit dollar entering the hands of a recipient we see 88 cents in local output returns. The difference between the two multipliers is explained by initial expenditure and savings decisions by EITC recipients. The credit multiplier is more than likely an under-estimate, due to the caution taken in underlying assumptions about low-income family mobility and savings.

Total economic impact, value added, and the adjusted direct impact are plotted for the time series in graph 4.4d. Regional EITC multipliers explain the gaps between direct and total impacts. The multiplier has been steadily decreasing between TY 1997 and 2004, from 1.073 to 1.065, meaning economic returns are being eaten away by increasing leakage rates as more low-income consumer purchases are being manufactured outside of Nashville.

"Value added" measures the difference between the prices of final goods and services and the cost of intermediate production (externally purchased materials and services). Value added dollars are composed primarily of indirect business taxes (i.e. sales tax), corporate income, and labor income. The federal EITC thus added over $50 million in value to the Nashville economy in 2005 (graph 4.4e). Value added measurements from previous years ranged from $43 to $50 million. A more extensive analysis on labor and tax impacts will come in the following sections.

Tables 4.4f and 4.4g disaggregate the local EITC impact iterations by two-digit NAICS codes to show the industry-specific output impacts for the latest tax year studied (2004). The health and social services industry received the greatest local output gain with approximately $15.9 million, or 15.2 percent of the total EITC-induced output. The local retail trade industry output was boosted by, $10.6 million or 10.1 percent of the total output impact. Local government received the next highest allocation, accounting for approximately $10.4 million or 9.8 percent of total impact. Three other local industries had EITC-induced output exceeding $5 million in 2005: Finance and insurance received a $6.9 million boost, real estate and rental received $6.7 million, and wholesale trade produced $5.3 million in additional output.

4.4a: Davidson County – Total Output Impact Accounting by Year – Final Adjusted Direct Impact

Tax Year	Year of Impact	Final Adjusted Direct Impact, Nominal	Final Adjusted Direct Impact, Real
1997	1998	$57,405,740	$70,609,060
1998	1999	$56,413,540	$67,696,248
1999	2000	$57,924,655	$67,192,600
2000	2001	$58,296,272	$65,874,788
2001	2002	$60,580,737	$67,244,618
2002	2003	$67,739,359	$73,835,901
2003	2004	$71,204,209	$75,476,461
2004*	2005	$75,264,080	$76,769,362
			$564,699,038

4.4b: Davidson County – Total Output Impact Accounting by Year – Transaction Leakages

Tax Year	Year of Impact	Transaction Leakages, Real	Transaction Leakages, % of Total Impact
1997	1998	$21,182,042	21.85%
1998	1999	$20,295,902	21.86%
1999	2000	$20,198,704	21.93%
2000	2001	$19,855,316	22.00%
2001	2002	$20,322,092	22.06%
2002	2003	$22,314,302	22.08%
2003	2004	$22,807,414	22.09%
2004*	2005	$23,141,283	22.06%
		$170,117,055	

4.4c: Davidson County – Total Output Impact Accounting by Year – Total Impact Aggregates and Multipliers using Present Dollar Value (2006)

Tax Year	Year of Impact	Total Impact [1]	Total Local Impact [2]	Local Impact Multiplier [3]
1997	1998	$96,931,639	$75,749,597	1.073
1998	1999	$92,857,564	$72,561,662	1.072
1999	2000	$92,120,272	$71,921,568	1.070
2000	2001	$90,269,497	$70,414,181	1.069
2001	2002	$92,103,009	$71,780,917	1.067
2002	2003	$101,060,182	$78,745,879	1.066
2003	2004	$103,233,519	$80,426,106	1.066
2004*	2005	$104,923,944	$81,782,661	1.065
		$773,499,625	**$603,382,571**	

[1] Defined as total economic output; includes final adjusted direct impact, indirect impact, induced impact, and transaction leakages
[2] Transaction leakages subtracted from total impact/economic output.
[3] Final adjusted direct impact divided by total local impact/economic output.

Graph 4.4d: Davidson County – EITC's Impact on Total Economic Output and its Value Added to the Nashville Economy – by Year using Present Dollar Value (2006)
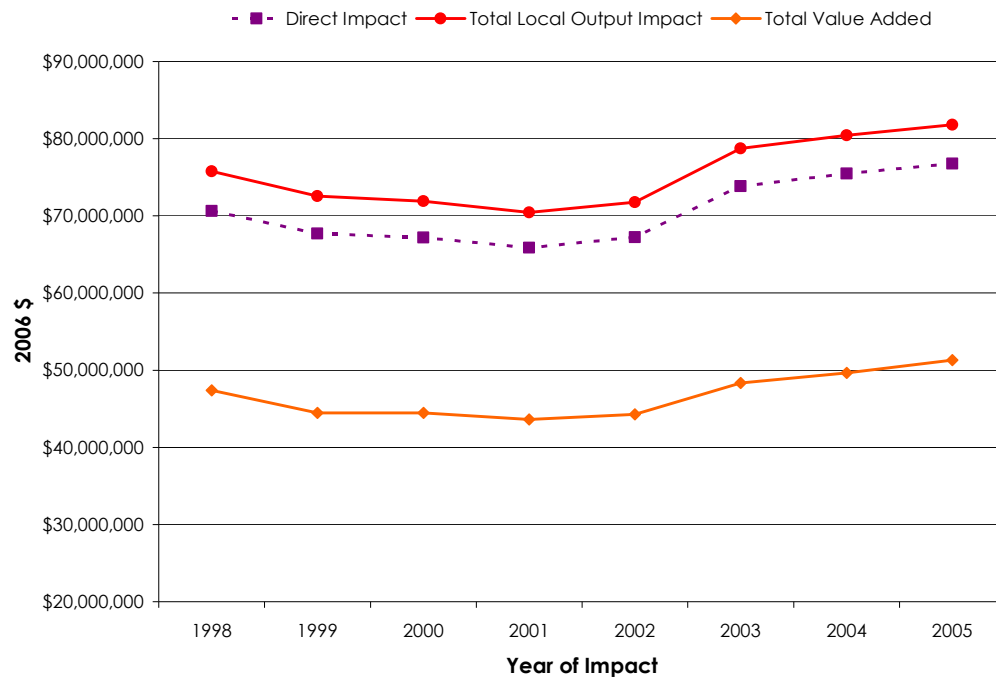
Graph 4.4e: Davidson County – Where is Value Being Added? – by Year using Present Dollar Value (2006)
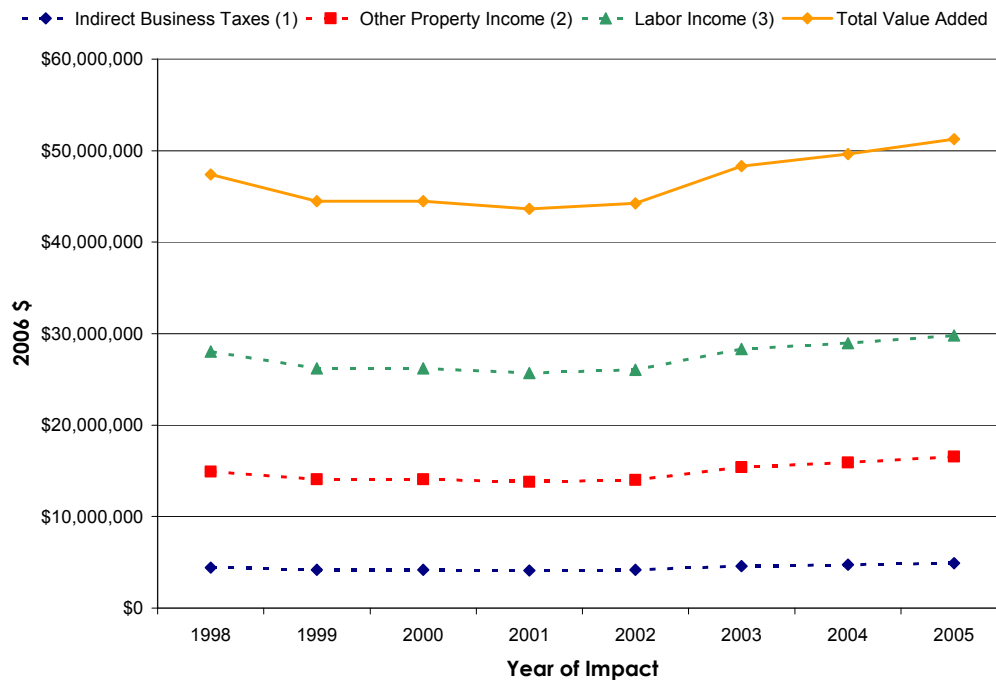
[1] Sales, excise and other taxes paid during normal operation of industry; this does not include taxes paid on net income.
[2] Includes corporate income, rental income, interest, and corporate transfer payments.
[3] Includes employee compensation and sole-proprietor income.

Table 4.4f: Davidson County – Total Impact Accounting TY 2004 – Two-Digit NAICS Disaggregated Economic Impacts using Present Dollar Value (2006)

Local Industry	Direct	Indirect [1]	Induced [2]	Total
11 Ag, Forestry, Fish & Hunting	15,216	6,328	4,832	26,377
21 Mining	2,694	42,224	7,450	52,368
22 Utilities	586,580	119,894	114,792	821,266
23 Construction	0	443,570	94,227	537,797
31-33 Manufacturing	2,207,616	927,031	688,372	3,823,020
42 Wholesale Trade	3,493,209	915,727	909,042	5,317,978
48-49 Transportation & Warehousing	1,114,369	883,593	441,084	2,439,046
44-45 Retail trade	8,219,858	428,667	1,951,608	10,600,134
51 Information	1,422,392	843,764	487,620	2,753,777
52 Finance & insurance	3,537,705	1,950,383	1,421,902	6,909,991
53 Real estate & rental	3,473,657	2,346,292	926,494	6,746,444
54 Professional- scientific & tech svcs	798,034	1,236,112	423,861	2,458,008
55 Management of companies	0	607,516	133,250	740,766
56 Administrative & waste services	229,930	1,074,011	269,686	1,573,627
61 Educational svcs	1,109,128	45,294	318,815	1,473,238
62 Health & social services	13,294,417	75,066	2,549,311	15,918,795
71 Arts- entertainment & recreation	754,748	144,025	204,984	1,103,758
72 Accomodation & food services	2,915,529	351,171	873,340	4,140,040
81 Other services	2,812,428	381,404	751,217	3,945,048
92 Government & non NAICs	7,588,982	757,672	2,004,236	10,350,890
Non-Local Instutitions	23,192,869	0	0	23,192,869
	76,769,364	**13,579,747**	**14,576,123**	**104,925,234**

[1] Additional impacts caused by industries purchasing from industries.
[2] Impacts from secondary household expenditures.

Table 4.4g: Davidson County – Total Impact Accounting TY 2004 – Industry Multipliers

| Local Industry	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	0.0001	0.0001	0.0000	0.0003
21 Mining	0.0000	0.0004	0.0001	0.0005
22 Utilities	0.0056	0.0011	0.0011	0.0078
23 Construction	0.0000	0.0042	0.0009	0.0051
31-33 Manufacturing	0.0210	0.0088	0.0066	0.0364
42 Wholesale Trade	0.0333	0.0087	0.0087	0.0507
48-49 Transportation & Warehousing	0.0106	0.0084	0.0042	0.0232
44-45 Retail trade	0.0783	0.0041	0.0186	0.1010
51 Information	0.0136	0.0080	0.0046	0.0262
52 Finance & insurance	0.0337	0.0186	0.0136	0.0659
53 Real estate & rental	0.0331	0.0224	0.0088	0.0643
54 Professional- scientific & tech svcs	0.0076	0.0118	0.0040	0.0234
55 Management of companies	0.0000	0.0058	0.0013	0.0071
56 Administrative & waste services	0.0022	0.0102	0.0026	0.0150
61 Educational svcs	0.0106	0.0004	0.0030	0.0140
62 Health & social services	0.1267	0.0007	0.0243	0.1517
71 Arts- entertainment & recreation	0.0072	0.0014	0.0020	0.0105
72 Accomodation & food services	0.0278	0.0033	0.0083	0.0395
81 Other services	0.0268	0.0036	0.0072	0.0376
92 Government & non NAICs	0.0723	0.0072	0.0191	0.0987
Non-Local Instutitions	0.2210	0.0000	0.0000	0.2210
	0.7317	**0.1294**	**0.1389**	**1.0000**

4.5   Employment and Labor Impacts, Davidson County-Nashville

Federal EITC dollars spent and re-spent within the Nashville economy produce a robust employment response (graph 4.5a, table 4.5b). The EITC sustains on average 648.6 local FTE jobs annually; in 2005, the number of EITC-induced jobs exceeded 700 for the first time. Taking into consideration the average credit amount in Davidson County, it currently takes about seventy-three EITC credits (or $106,290 in real direct impact) to support one full-time equivalent position. The amount of low-income consumption dollars required to support one FTE in Nashville has increased with each successive year—87,031 real dollars were required to support an FTE in 1998, while $106,290 was required to support an FTE in 2005. However, average real EITC credit amounts have also increased year-over-year and the average number of credits to sustain an FTE has remained stable over time.

Labor income over the time series totaled $219.3 million or 36.3 percent of the total local output impact (table 4.5c). In other words, Nashville-based employees retain about a third of the EITC-induced output as salary or wage earnings. This ratio of employee output "ownership" has not changed significantly over time. During the most recent tax year, wage-earners retained $29.8 million of the $81.8 in local real output impact. Thus, during 2005 the EITC supported 708 jobs with an average yearly salary of $42,090. Labor income is divided between employees and self-proprietors in table 4.5d.

When the employment data is disaggregated by industry (tables 4.5e and 4.5f) we see that the largest number of EITC-supported jobs are being created in retail establishments; for example, the TY 2004 EITC created 150 retail jobs during 2005 (or 21.2 percent of total EITC jobs created that year). Other beneficiaries are employees in health and social services (132 jobs), accommodation & food services (81 jobs), and other services (85 jobs). Jobs created in retail establishments are of the lower- to middle-income variety with an average real salary of $31,348. Jobs created in health and social services are mostly high-income with an average real salary of $69,301. Finally, jobs created in accommodation & food services and other services are among the lowest-paying, with average real salaries of $20,769 and $19,811, respectively. The data suggests that the EITC not only supports the wider working-poor population with tax assistance but also works redundantly to provide a small portion of this population with employment in retail and other service-oriented jobs.

Graph 4.5a: Davidson County – Employment Impacts – Local Jobs (FTE's) Sustained by the EITC
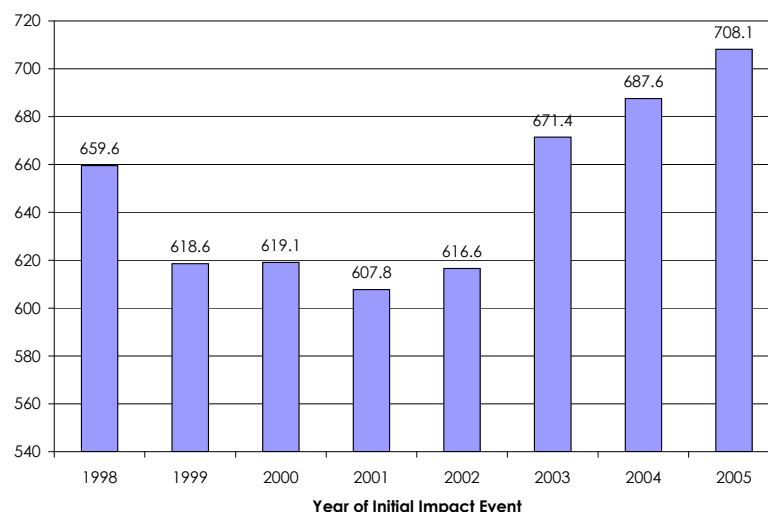
Table 4.5b: Davidson County – Employment Impacts – Local Jobs (FTE's) Created Year-to-Year by EITC Dollars with FTE's per Impact Unit (Real $, Credits)

Tax Year	Year of Impact	FTE Employment, Adjusted	Direct $/FTE	Credit $/FTE	Credits/FTE
1997	1998	659.6	$87,031	$130,547	71
1998	1999	618.6	$91,196	$133,457	73
1999	2000	619.1	$93,563	$132,357	73
2000	2001	607.8	$95,914	$132,174	74
2001	2002	616.6	$98,250	$132,996	74
2002	2003	671.4	$100,893	$134,113	73
2003	2004	687.6	$103,555	$133,863	74
2004*	2005	708.1	$106,290	$132,215	73
	Averages	**648.6**	**$97,086**	**$132,715**	**73**

Table 4.5c: Davidson County – Employment Impacts – Labor Income (Real $) and Labor Income as Percentage of Local Output

Tax Year	Year of Impact	Labor Income, Adjusted	Labor Income, % of Local Output
1997	1998	$28,044,392	37.0%
1998	1999	$26,209,928	36.1%
1999	2000	$26,202,131	36.4%
2000	2001	$25,697,689	36.5%
2001	2002	$26,045,543	36.3%
2002	2003	$28,318,393	36.0%
2003	2004	$28,966,462	36.0%
2004*	2005	$29,787,394	36.4%
		$219,271,932	**36.3%**

Table 4.5d: Davidson County – Employment Impacts – Labor Income Breakdown (Real $)

Tax Year	Year of Impact	Employee Compensation, Adjusted	Self-Proprietor Income, Adjusted
1997	1998	$22,053,114	$5,991,278
1998	1999	$20,631,794	$5,578,134
1999	2000	$20,638,538	$5,563,593
2000	2001	$20,253,074	$5,444,615
2001	2002	$20,538,523	$5,507,020
2002	2003	$22,338,317	$5,980,076
2003	2004	$22,857,218	$6,109,244
2004*	2005	$23,512,915	$6,274,479
		$172,823,493	**$46,448,439**

Table 4.5e: Davidson County – Employment Impacts – FTE's Created by TY 2004 EITC, Two-Digit NAICS Industry Breakdown

Industry	Direct	Indirect	Induced	Total	% of Total
11 Ag, Forestry, Fish & Hunting	0.8	0.3	0.3	1.4	0.2%
21 Mining	0	0.2	0	0.2	0.0%
22 Utilities	1	0.2	0.2	1.5	0.2%
23 Construction	0	4.8	1	5.8	0.8%
31-33 Manufacturing	6.7	3.8	2.3	12.8	1.8%
42 Wholesale Trade	23	6	6	34.9	4.9%
48-49 Transportation & Warehousing	8.1	8.4	3.6	20.1	2.8%
44-45 Retail trade	116.3	6.1	27.6	150.1	21.2%
51 Information	5.3	4.2	2	11.5	1.6%
52 Finance & insurance	15.5	10.7	6.7	33	4.7%
53 Real estate & rental	22.2	13.5	5.7	41.3	5.8%
54 Professional- scientific & tech svcs	8.3	11.3	4.2	23.9	3.4%
55 Management of companies	0	4	0.9	4.8	0.7%
56 Administrative & waste services	3.1	20.2	4.8	28.1	4.0%
61 Educational svcs	16.2	0.6	5.1	21.9	3.1%
62 Health & social services	110.8	0.4	21	132.2	18.7%
71 Arts- entertainment & recreation	8.3	2.4	2.5	13.2	1.9%
72 Accomodation & food services	57.4	6.5	17.1	81	11.4%
81 Other services	64.2	4.8	16.1	85.1	12.0%
92 Government & non NAICs	3.3	1.1	0.8	5.2	0.7%
Totals	**470.5**	**109.6**	**127.9**	**708.1**	

Table 4.5f: Davidson County – Employment Impacts – Labor Income (Real $) Created by TY 2004 EITC and Average Salaries Supported, Two-Digit NAICS Industry Breakdown

Industry	Direct	Indirect	Induced	Total	Avg. Salary
11 Ag, Forestry, Fish & Hunting	$2,409	$1,462	$884	$4,755	$3,396
21 Mining	218	3,597	646	4,461	22,305
22 Utilities	91,772	19,095	18,027	128,894	85,929
23 Construction	0	187,908	39,068	226,976	39,134
31-33 Manufacturing	360,612	224,787	132,146	717,545	56,058
42 Wholesale Trade	1,382,020	362,289	359,644	2,103,953	60,285
48-49 Transportation & Warehousing	402,120	436,847	184,049	1,023,016	50,896
44-45 Retail trade	3,646,769	192,293	866,329	4,705,391	31,348
51 Information	355,079	253,037	129,877	737,993	64,173
52 Finance & insurance	1,084,760	711,500	465,267	2,261,527	68,531
53 Real estate & rental	565,279	349,736	151,098	1,066,113	25,814
54 Professional- scientific & tech svcs	454,642	746,852	248,663	1,450,156	60,676
55 Management of companies	0	273,937	60,084	334,021	69,588
56 Administrative & waste services	97,338	571,466	138,397	807,201	28,726
61 Educational svcs	631,160	23,593	181,687	836,441	38,194
62 Health & social services	7,650,448	35,399	1,475,702	9,161,549	69,301
71 Arts- entertainment & recreation	353,271	62,941	91,366	507,578	38,453
72 Accomodation & food services	1,185,990	141,586	354,724	1,682,299	20,769
81 Other services	1,233,226	136,324	316,381	1,685,931	19,811
92 Government & non NAICs	215,678	75,070	50,848	341,595	65,691
Totals/Average	**19,712,791**	**4,809,717**	**5,264,886**	**29,787,394**	**42,067**

4.6   Fiscal Impacts to Local Government, Davidson County-Nashville

State and local governments benefit from increased tax collections on commerce attributed to local EITC expenditures. Table 4.6a provides a tax impact summary from the latest year under study, 2005, as an example. Tax revenues on EITC-induced commerce totaled 5.6 million real, present-value dollars. Most of this amount ($3.2 million) was collected through the state/county sales tax. The 9.25 percent sales tax rate in Davidson County is comprised of a 7 percent state tax and a 2.25 percent local option sales tax set by Metro government. The Metro portion of tax revenues is thus approximately 24 percent, or $0.78 million. Davidson County commercial property taxes also received a large boost ($1.12 million). Thus, the total local share of EITC tax revenues is roughly $1.9 million, or 2.3 percent of the total economic output. Table 4.6b provides the effective tax rates on the EITC's value-added activity in the economy.

Table 4.6a: Davidson County – State/Local Tax Impact Summary – Tax Revenues (Real $)
Induced by EITC TY 2004 Expenditures

Tax Categories	Employee Compensation	Proprietary Income	Household Expenditures	Corporations	Indirect Business Taxes	Total
Corporate Profits Tax				183,772		183,772
Dividends				312,571		312,571
Indirect Bus Tax: Motor Vehicle Lic					49,007	49,007
Indirect Bus Tax: Other Taxes					432,153	432,153
Indirect Bus Tax: Property Tax					1,120,236	1,120,236
Indirect Bus Tax: S/L NonTaxes					112,098	112,098
Indirect Bus Tax: Sales Tax					3,205,868	3,205,868
Indirect Bus Tax: Severance Tax					280	280
Personal Tax: Estate and Gift Tax						0
Personal Tax: Income Tax			25,379			25,379
Personal Tax: Motor Vehicle License			34,775			34,775
Personal Tax: NonTaxes (Fines, Fees)			61,706			61,706
Personal Tax: Other Tax (Fish/Hunt)			11,259			11,259
Personal Tax: Property Taxes			8,110			8,110
Social Ins Tax- Employee Contribution	6,701					6,701
Social Ins Tax- Employer Contribution	18,213					18,213
Total	**24,914**	**0**	**141,228**	**496,344**	**4,919,642**	**5,582,128**

5.   **POTENTIAL IMPACT OF THE EITC TO DAVIDSON COUNTY-NASHVILLE**

Several key assumptions were made in estimating the amount of potential EITC left unclaimed. Based on an analysis conducted by the United States General Accounting Office (2001), it was assumed that the number of eligible persons not claiming the EITC was 25 percent of those receiving the credit. It was further assumed, based on research by the Brookings Institution (n.d.), that eligible persons not claiming the credit were likely to have a lower EITC amount—estimated at 75 percent of the average credit received. Thus, the amount of potential EITC left unclaimed was estimated at 18.75 percent (0.25 times 0.75) of the EITC amount actually received in Nashville.

Davidson County-Nashville residents left approximately $19.9 million present-value EITC on the table in TY 2004 (table 5b). Over the eight-year time series, the unrealized credits totaled $146.1 million. Total economic output gains forgone during TY 2004 and the time series were $17.3 and $128.0 million, respectively. The forgone Metro tax revenue was $399,000 for TY 2004 and an accumulated $2.9 million over the eight-year time series (table 5c). On average, each additional credit recipient brings in $31 in local tax revenue each year. It is likely that these tax benefits would ultimately exceed the costs of a campaign to capture additional EITC dollars.

Table 5a: Davidson County – Potential Impact Summary – Actual Refund Amounts versus Estimated Max Refund Amounts

Tax Year	Year of Impact	Refund Amount, Nominal	Refund Amount, Real (2006 $)	Estimated Max Refund, Nominal	Estimated Max Refund, Real
1997	1998	$70,007,000	$86,108,610	$84,856,970	$104,374,073
1998	1999	$68,797,000	$82,556,400	$83,390,303	$100,068,364
1999	2000	$70,639,823	$81,942,195	$85,624,028	$99,323,872
2000	2001	$71,093,015	$80,335,107	$86,173,352	$97,375,887
2001	2002	$73,878,948	$82,005,632	$89,550,240	$99,400,766
2002	2003	$82,580,986	$90,013,275	$100,098,165	$109,107,000
2003*	2004	$86,834,401	$92,044,465	$105,253,819	$111,569,049
2004*	2005	$91,785,464	$93,621,173	$111,255,108	$113,480,210
	Total		$688,626,857		$834,699,220

Table 5b: Davidson County – Potential Impact Summary – Additional EITC Refund Amount and Total Output Impact Potentials

Tax Year	Year of Impact	Additional EITC Amount Potential, Nominal	Additional EITC Amount Potential, Real	Refund Amount Output Multiplier	Additional Total Output Impact, Real
1997	1998	$14,849,970	$18,265,463	0.8797	$16,068,096
1998	1999	$14,593,303	$17,511,964	0.8789	$15,391,868
1999	2000	$14,984,205	$17,381,678	0.8777	$15,256,090
2000	2001	$15,080,337	$17,040,780	0.8765	$14,936,341
2001	2002	$15,671,292	$17,395,134	0.8753	$15,226,255
2002	2003	$17,517,179	$19,093,725	0.8745	$16,698,012
2003*	2004	$18,419,418	$19,524,583	0.8738	$17,060,083
2004*	2005	$19,469,644	$19,859,037	0.8735	$17,347,837
	Total		$146,072,364		$127,984,583

Table 5c: Davidson County – Potential Impact Summary – Potential Additional Local Tax Revenue (Present Value), Revenue per Additional Recipient, and Additional Recipients

Tax Year	Year of Impact	Additional Local Tax Revenue	Local Tax Revenue per Additional Recipient	Additional Recipients
1997	1998	$369,566	$31	11,753
1998	1999	$354,013	$32	11,227
1999	2000	$350,890	$31	11,223
2000	2001	$343,536	$30	11,272
2001	2002	$350,203	$31	11,360
2002	2003	$384,054	$31	12,251
2003	2004	$392,382	$31	12,701
2004*	2005	$399,000	$31	12,983
		$2,943,645		

6. GEOGRAPHIC TRENDS IN THE CITY'S WORKING-POOR POPULATION

This section takes full advantage of the zip-code level EITC recipient data from TY 1997-2003. High-resolution data presents an opportunity to analyze trends in the distribution of the working poor in and around Nashville; the author locates working-poor population centers and then attempts to identify areas that have experienced gentrification or worsening "working poverty" over the time series.

6.1 Nashville's Working-Poor Distribution, TY 2003: The 65-24 Corridor

Map 6.1a presents EITC dollar distributions in the Nashville MSA for TY 2003, the most recent year for which zip-code level data is available. The blue bars represent nominal 2003 dollar amounts for each ZCTA (zip code tabulation area). The underlying shaded ZCTA regions help to normalize the aggregate dollar amounts by displaying the density of EITC returns to all tax returns. Hatch markings identify select zip-code area groupings (i.e. wealthiest, poorest, and median) within the MSA that are used in additional analysis. A fourth grouping represents a band of east Nashville zip codes that hug two major interstates and are home to unusually high concentrations of EITC recipients.

The concentrated band, termed here as the "65-24 Corridor," stretches approximately fifty highway miles from northeast Nashville to Murfreesboro, TN. The first leg proceeds from Goodlettsville in Davidson County down I-65S for 13 miles through three zip codes including the city's second and third poorest in terms of EITC recipient density, 37207 and 37206. The two zip codes have 38.6 and 33.5 percent recipient rates, respectively.[3] A short, 2.5-mile second leg on I-40E connects I-65 with I-24 and crosses through the heart of east downtown and the city's fourth poorest zip code, 37210, with an EITC rate of 32.8 percent. The final leg proceeds down I-24 for approximately 32 miles through southeast Davidson County before terminating in Murfreesboro, Rutherford County. The leg features seven zip-code areas with average (37167, 37129) or above average (37217, 37211, 37013, 37086, and 37130) recipient rates, ranging from 13.5 to 21.7 percent. These I-24 zip codes have also featured the highest recipient growth rates in recent years, as the next section will elucidate.

Map 6.1b displays the same zip-code groupings but shades the underlying regions according to the EITC-recipient relative spatial density index.[4] The index orders zip codes from the most spatially dense EITC populations to the least dense. The map most closely represents what you would "see" walking through a neighborhood. Areas of particularly high EITC spatial density are composed primarily of the same zip codes identified in the 65-24 Corridor. The spatially dense EITC population takes on more of a crescent shape, though, as it bends northeast into Sumner County.

---

[3] EITC recipient rates are defined as the number of EITC filings in a zip code divided by all tax filings in that zip code, thus measuring the EITC receipt rate in a zip code's taxpayer population.

[4] Instead of measuring the ratio of EITC recipients to taxpayers in each zip code, the spatial density index scales each zip code according to deviation between a zip code's portion of total MSA area (square units) and the zip code's portion of the total number of EITC filers in the MSA.

Table 6.1c makes comparisons between the 65-24 Corridor and other zip code groupings. The zip-code areas that compose the Corridor have an average recipient rate of 21.5 percent compared to the 14.4 percent average in all other MSA zip codes and 16.6 percent in the combined MSA group. The Corridor receives 40.9 percent of total EITC dollars in the MSA despite having only 30.5 percent of the MSA's taxpayer population. All other zip codes receive the remaining 59.1 percent of EITC dollars despite composing 69.5 percent of the MSA's taxpayer population.

Though just outside of the corridor in Nashville's west side, 37208 is the MSA's "poorest" zip code with an EITC recipient density at 48.0 percent. The zip code contains 0.9 percent of the taxpayer population despite bringing in 2.8 percent of the MSA's EITC dollars. The average EITC credit in 37208 is $1,915 (2003 dollars) compared with $1,750 in the Corridor and $1,659 in all other zip codes. The MSA's "wealthiest" zip code (37220) resides in south Nashville just north of Brentwood, containing Oak Hill and parts of Radnor Lake. The average credit in 37220 is $1,076 but the EITC amount per taxpayer is a miniscule $34; only 3.1 percent of taxpayers here receive the EITC. The MSA's median credit, the average of two rural zip codes, is $1,790. The MSA's average credit is $1,695.

## 6.2   Trends in the EITC Zip-Code Distribution from TY 1997 to 2003

Map 6.2a layers the real EITC credit amount (2006 dollars) time series over zip-code areas shaded similarly as the first map, by the TY 2003 EITC recipient rates. In general, zip codes in west and northwest Nashville have displayed consistent negative growth in real credit amounts year-over-year (green hatching) during the period studied. Conversely, east Nashville zip codes have displayed consistent positive growth in real credit amounts year-over-year (black hatching). The area with consistent positive growth in real credit amounts closely resembles the 65-24 corridor grouping, which identifies geographically proximate zip codes with above average EITC recipient densities.

Map 6.2b identifies changes in EITC recipient densities in the MSA between TY 1997 and 2003. Densities were used instead of the numbers of recipients to control for population growth. In general, every county in the MSA was more dependent, as a percentage of the total tax-paying population, on the EITC in TY 2003 than they were in TY 1997. Growth in EITC dependency was especially prevalent in the 65-24 corridor. Only 15 of the 141 zip codes in the MSA grew less dependent on the EITC. While map 6.2a shows decreasing real credit amounts in more zip codes, particularly in west Nashville, population also decreased in these areas and EITC dependency as a percentage of tax filers actually remained constant or increased in these zip codes.

Map 6.2c displays the same data as Map 6.2b but focuses on Davidson County-Nashville only. Satellite imagery and zip code labels were also added to aid in neighborhood identification.

More extensive zip-code level data and EITC geo-databases—too much content to be summarized in the study—can be obtained by request to the author.

Map 6.1a: Nashville MSA – Where are the Working Poor? – EITC Distribution, Densities and Groupings in the Nashville MSA (TY 2003)
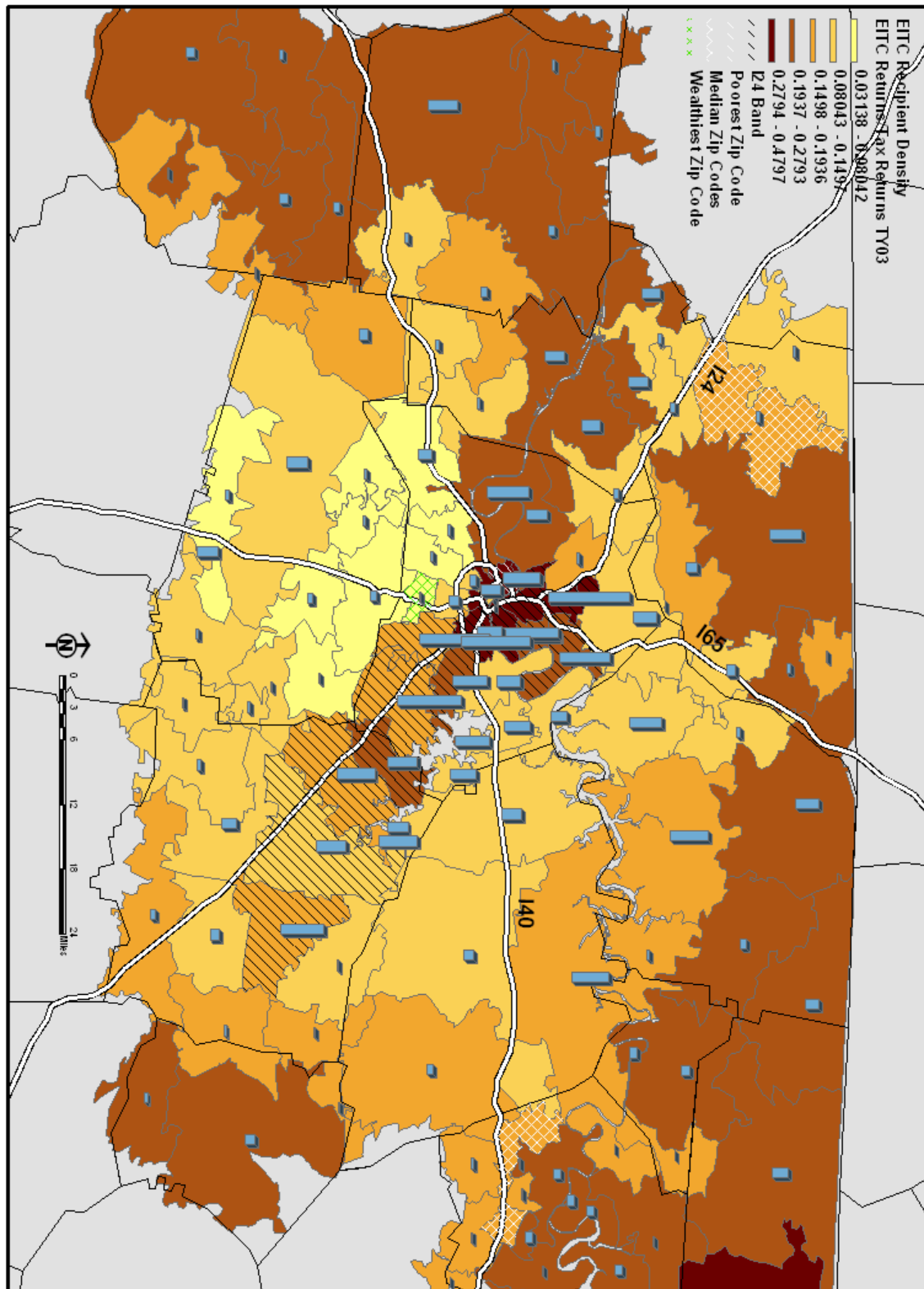
Map 6.1b: Nashville MSA – Where are the Working Poor? – Zip-Code Spatial Density Index and Groupings of EITC Recipients (TY 2003)
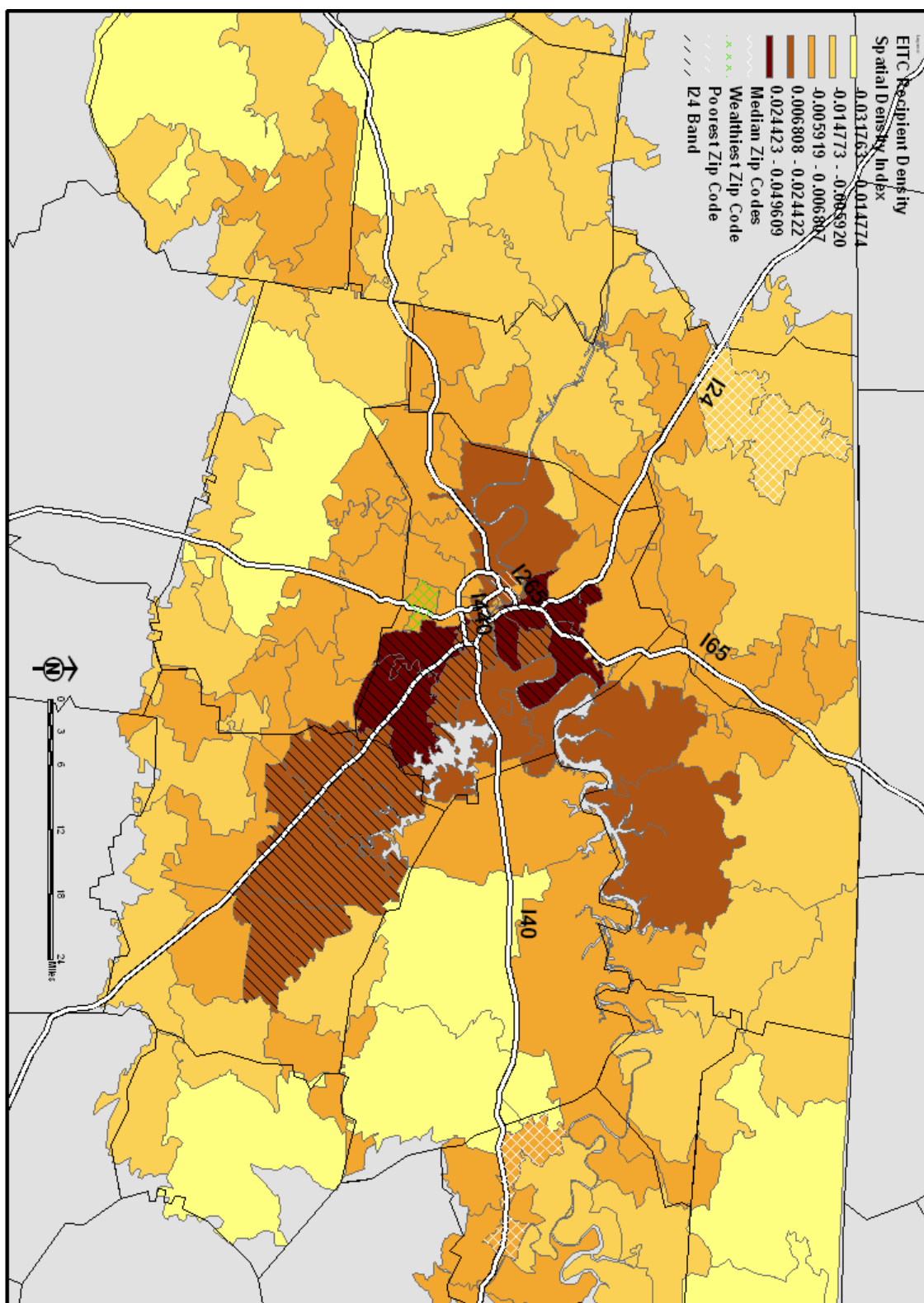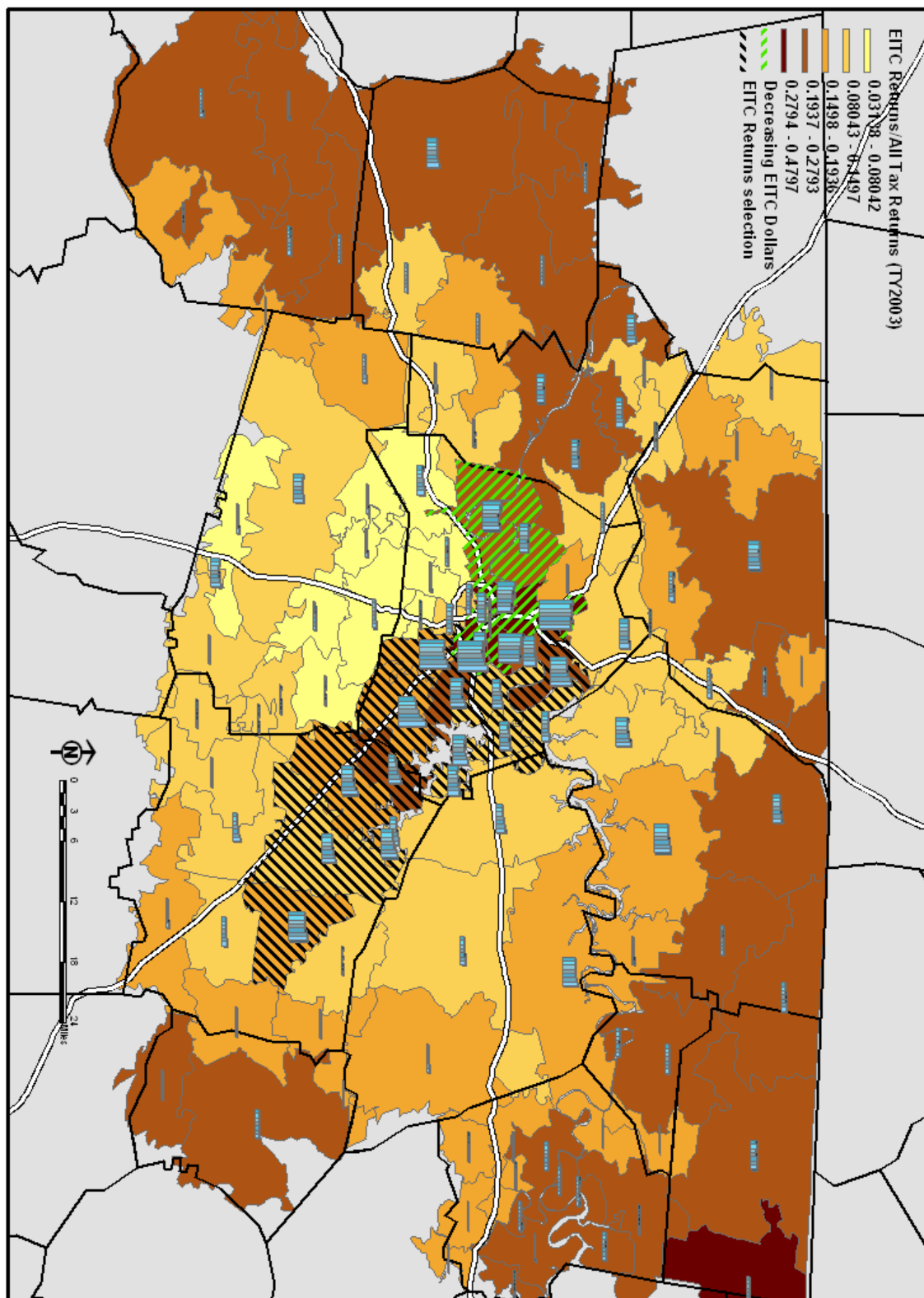
**Table 6.1c: TY 2003 - Comparative Descriptive Statistics
across Selected MSA Study-Area Zip-Code Groupings**

| Grouping	Function	Tax Returns	EITC Returns	EITC Amount
65-24 Corridor	Sum	188,939	40,699	$71,230,819
n=12	Average	15,745	3,392	$5,935,902
	EITC $/return	$377	$1,750	--
	EITC Recipient Rate*	0.215	--	--
	Grouping/MSA	0.305	0.396	0.409
MSA w/o Corridor	Sum	431,195	62,122	$103,090,623
n=129	Average	3,343	482	$799,152
	EITC $/return	$239	$1,659	--
	EITC Recipient Rate	0.144	--	--
	Grouping/MSA	0.695	0.604	0.591
"Poorest" Zip Code**	Sum	5,293	2,539	$4,861,546
(37208)	EITC $/return	$918	$1,915	--
n=1	EITC Recipient Rate	0.480	--	--
	Grouping/MSA	0.009	0.025	0.028
Median Zip Code(s)	Sum	2,655	449	$803,512
(37032)	Average	1,328	225	$401,756
(38563)	EITC $/return	$303	$1,790	--
n=2	EITC Recipient Rate	0.169	--	--
	Grouping/MSA	0.004	0.004	0.005
"Wealthiest" Zip Code**	Sum	3,250	102	$109,802
(37220)	EITC $/return	$34	$1,076	--
n=1	EITC Recipient Rate	0.031	--	--
	Grouping/MSA	0.005	0.001	0.001
MSA	Sum	620,134	102,821	$174,321,442
n=141	Average	4,398	729	$1,236,322
	EITC $/return	$281	$1,695	--
	EITC Recipient Rate	0.166	--	--

* EITC recipient rate = EITC Returns / Tax Returns

** Poorest/Wealthiest zip codes defined by highest/lowest EITC recipient rate

Map 6.2a: Nashville MSA – Where are the Working Poor Moving? – Credit Amount Time Series (Present Values), Densities, and Generalized Real Growth Groupings

EITC Returns/All Tax Returns (TY2003)

0.03198 - 0.08042
0.08043 - 0.1497
0.1498 - 0.1936
0.1937 - 0.2793
0.2794 - 0.4797
Decreasing EITC Dollars
EITC Returns selection

**Map 6.2b: Nashville MSA – Where are the Working Poor Moving? – Percentage Change
in the EITC/Tax Return Ratio (TY 1997-2003)**
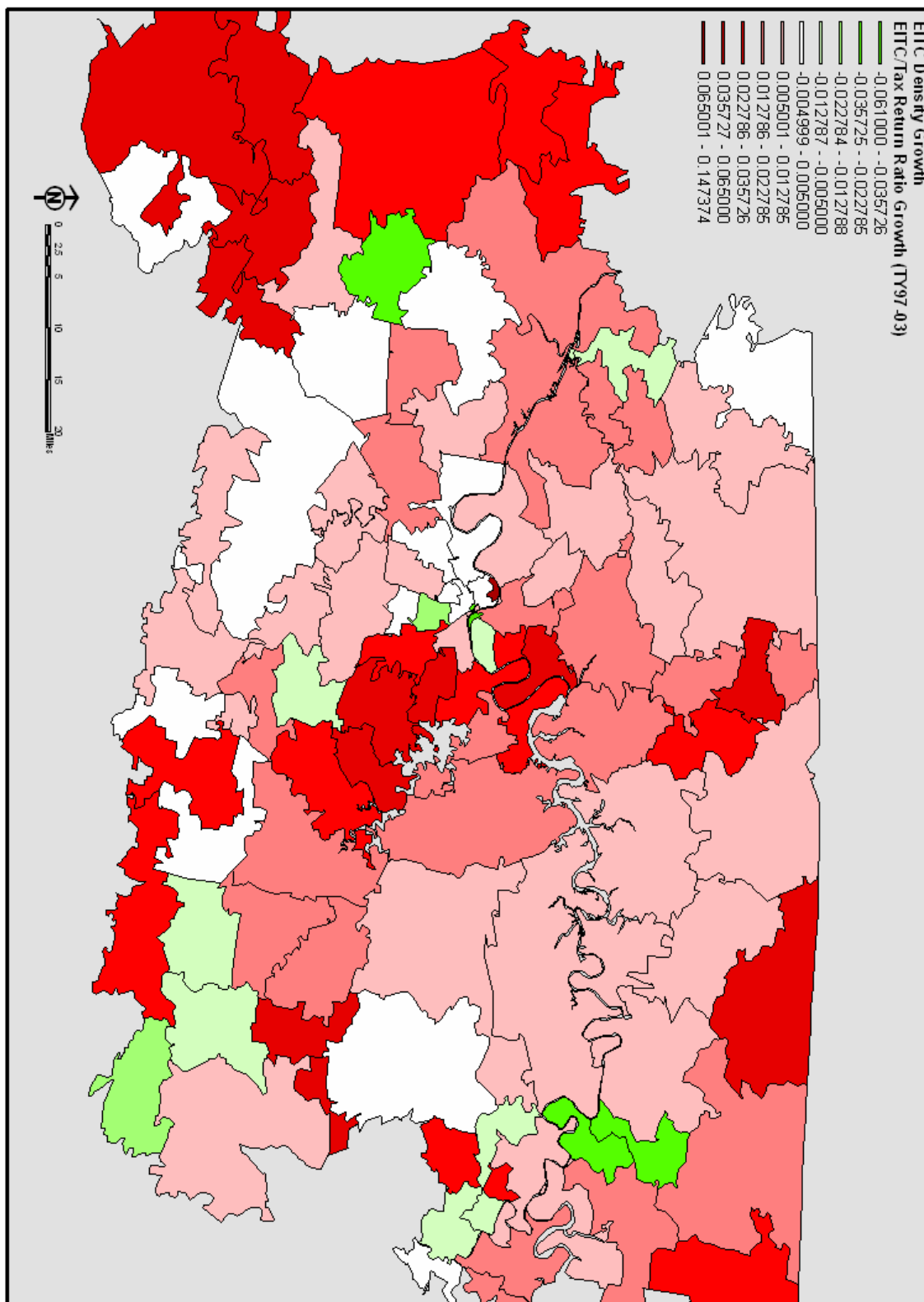
Map 6.2c: Davidson County center – Where are the Working Poor Moving? – Percentage Change in the EITC/Tax Return Ratio (TY 1997-2003) w/ Satellite Base Map
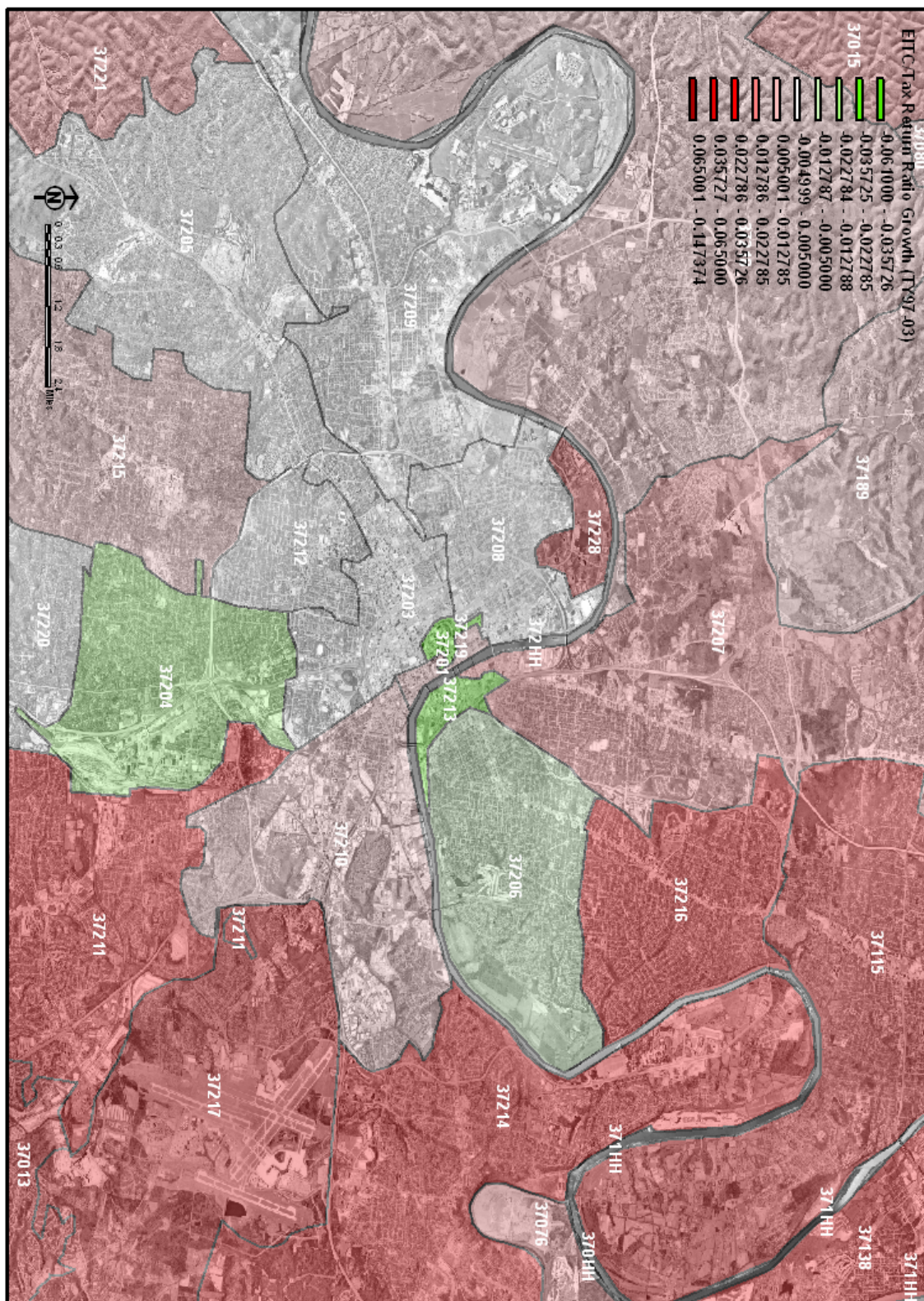
REFERENCES

Brookings Institution. (n.d.) *Using EITC Data – A Guide.*

Barrow, L. and McGranahan, L. (1999). The Earned Income Credit and Durable Goods Purchases. Working Paper Series WP-99-24, Federal Reserve Bank of Chicago.

Capbell, J. and Mankiw, G. (1990). Permanent Income, Current Income and Consumption. Journal of Business & Economic Statistics, 8(3): 265-279.

Dickert, Hauser, & Scholz (1995). The Earned Income Credit and Transfer Programs: A Study of Labor Market and Program Participation. Tax Policy and the Economy, Vol. 9, MIT Press.

Edwards, R.D. (2004). Macroeconomic Implications of the Earned Income Tax Credit. National Tax Journal. 57(1): 21 pgs.

Haskell, J. et al. (2005). On the Efficacy of the Earned-Income Tax Credit: A Preliminary Report for the Nashville Wealth Building Alliance. Vanderbilt University: Department of Leadership, Policy and Organizations.

Hotz, J. and Sholz, J. (2002). The Earned Income Tax Credit. National Bureau of Economic Research. Cambridge, MA. 2001. http://www.nber.org/papers/W8078

Liebman, J. (1997). The Impact of the Earned Income Credit on Incentives and Income Distribution.

Maryland Budget and Tax Policy Institute (2000). The Earned Income Tax Credit: Does it Work?

Neuberg, L.G. (2004). Emergence and Defeat of Nixon's Family Assistance Plan (FAP). Joint Meeting of the United States Basic Income Group and the Eastern Economic Association. Washington, DC.

Romich, J. L., & Weisner, T. How Families View and Use the EITC: Advance Payment versus Lump Sum Delivery. Washington, National Tax Journal, December 2000.

Smeeding, T. M., Ross, K. E., & O'Connor, M. The Economic Impact of the Earned Income Tax Credit (EITC): Consumption, Savings and Debt. Syracuse, N. Y., Syracuse University, Center for Policy Research, October 1999.

Steuerle, G. The Future of the Earned Income Tax Credit. Economic Perspective. July, 1995. www.taxanalysts.com/www/econpers.nsf/

Ventry, D. (2001). The Collision of Tax and Welfare Politics: The Political History of the Earned Income Tax Credit, 1969-99. National Tax Journal, 53(4): 983-1025.